

# Miniatures

★ ★ ★ ★ ★ IN REVIEW ★ ★ ★ ★ ★

## Marder Madness!

We serve up a double dose of Tamiya's new sweetie

Just your Type(s)  
FineMold's newest  
Type 1 and 3

MMiR:  
guaranteed  
to make you  
a better  
modeler!  
(Results may vary)

## Giant Tigers Stalking the Earth!

Watch out Rover,  
here comes a model  
with movement!

Pachyderm  
with a punch  
Dragon's new Elephant

No. **26**

\$9.95

CANADA \$15.95

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# Miniatures<sup>TM</sup>

★ ★ ★ ★ ★ IN REVIEW ★ ★ ★ ★ ★

## C O N T E N T S

### In Review

#### The Father of the Tiger I

A sneak preview of upcoming attractions in the Panzer Tracts series.

#### Building Big Fred

The SNAR-10 location radar vehicle.

#### Home Alone

This time it's a Bedford QLR Command Truck from Resicast.

#### Marder, He Wrote

Tamiya's latest treat, the Marder III.

#### Giant Tigers Stalking the Earth!

Run for your lives! Tamiya's big 1/16th scale Tiger takes charge.

#### Pachyderm with a Punch

DML's great looking, long-nosed Panzer gets the Joe Porter treatment.

#### A Particular Panzerspähwagen

Building, converting and rehabilitating the old Tamiya kit.

#### Hail Yes

It's from SKIF, it's from ICM... well, for sure we know it's plastic.

#### Flamm-plastic!

The "hot" Flammpanzer II from Alan.

#### Baby Blitz

It's the Italeri kit's little brother in resin. Check it out.

#### Two Types of Type

We look at the Type I and the Type 3 WW2 Japanese tanks from FineMolds.

#### Got a light?

We serve up the flaming British Ram from Resicast.

### Features

#### The Mail Sack

The readers speak.

#### Short Takes

Our look at all the latest dope from around the world.

#### The Idea Bank

Our feature on what should be available, updated quarterly.

#### Mini-Men

The usual peek at what's new on the figure front.

#### Model Citizen

Here's all the good skinny on German WW2 overcoats.

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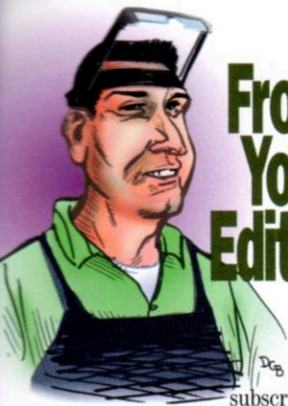


### ON THE COVER:

It's a plethora of plastic! Tamiya's "big" new releases take the lead. The review of the long awaited Marder III begins on page 33. We also give you a complete 5-page run-down on the new and huge Tiger 1/16th scale RC Tiger. And, if that's not enough, we "do" the new Elephant from Dragon.







## From Your Editor

### Attention MMiR Subscribers

Our switch-over from RZM is complete with this issue. We will be your point of contact from now on for all subscription related matters. If you have experienced any problems that you have not brought to light, please let us know. We can't fix it, if we don't know it's broken.

Our method will be to notify each individual by postcard when subscriptions are about to expire. If we haven't heard from you by the publication of the next issue, we'll drop another postcard in the mail, in case you forgot. Of course, if you have any questions about your subscription, we are only a phone call or an e-mail away. We want to help! All of the pertinent information can be found in the column at right and additional subscription information can also be found on page 73. Thanks for reading!

### Just a thought

I always get a little antsy whenever someone dies and they are memorialized for their involvement in a hobby. Certainly there had to be other significant achievements in this person's life. Raising children, the American Cancer Society, Jerry's Kids—something. "He loved his leisure time" just seems like such a hollow epitaph to me. But recently a man passed away whose love of military vehicles went way beyond a hobby. Bart Vanderveen, editor of *Wheels & Tracks* magazine died this past spring after a long battle with cancer. Bart had a life-long passion for military vehicles that started as a child and he made it his life's work. Bart was born in the Netherlands in 1938 and much of his childhood was spent observing the various MVs that passed through his village during the occupation. He spent many hours at a local body shop that repaired German vehicles and later, after the liberation, he continued to observe and even catalog the vehicles that he saw and loved. His career spanned 50 years and never strayed far from his favorite obsession. Bart wrote more than 30 books on motorized transport, both civilian and military. His *Historic Military Vehicles Directory* (After the Battle Publications, 1989 ISBN 0900913 57 6), covering all the world's military vehicles, is unparalleled. You've got one, right? And, his recent history of the Mack truck series is a must for every U.S. soft skin freak.

He and Winston Ramsey, the owner and editor of the After the Battle Publications, created the concept of *Wheels & Tracks*, a quarterly magazine about military vehicles back in 1982. The 75th issue was recently published and I was, at first, shocked to hear that it would be the last. The businessperson in me thought "what a silly and sentimental decision." And then, after reading through many of the bound volumes and the final issue, it hit me. This publication was a true labor of love and absolutely represented all the accumulated knowledge of this one guy. No one could do it better and frankly, no one ever will.

If you have never seen an issue of *Wheels & Tracks*, you are truly missing out. W&T is sold at finer hobby shops and mail order outlets and each issue is a wealth of information on different vehicles, plus they are just plain fun to read. Some fairly obscure stuff is often covered, but I can tell you from personal experience that you will frantically rip through your collection when you suddenly realize that W&T is the single source of information for your current project. All of the bound volumes and the back issues will continue to be available, so if you've missed out, it's not too late to get started.

Mr. Vanderveen's personal collection of books and photographs, which I'm certain is the largest and most unique on the planet, is to be donated to the George C. Marshall Museum in the Netherlands (these guys have a terrific collection of vehicles, too) and will eventually be accessible to researchers.

I never actually met Bart, but through our shared interests, I feel like I have. I know that it's rare to find a person that will follow his passions for a lifetime. I also know this: I'll miss the voice of his expertise. Drive safe, Mr. Vanderveen.

—Pat Stansell

## Coming in issue 27 of MMiR:

### Big, bad, Bergepanther

*This thing got best of show at the world's biggest figure show. A full report.*

### T-62 BDD

*Aires + CMD + Tamiya=T-62 love.*

### Jewel of the Orient

*A full review of the new resin Type 89 WW2 Japanese medium tank.*

### The big, the bad, and the fugly

*A full review of the Commander Series M103 super heavy tank.*

### Hot Stuff!

*Harper Casting's Satan flamethrower conversion.*



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# The Mail Sack



## The opinions expressed...

I have a rather uncompromising recon report to submit. I just picked up CD 7001, Canal Dyke diorama; Custom Dioramics answer to Verlinden's Canal Drawbridge. Both are very nice, highly detailed bases, but we ain't moving an M3 or an M24 over them anytime in the near future. And just forget anything heavier. You won't get a 6-by or a half-track over them, either. They are just too lightly built for anything heavier than a farm cart.

Mirage has a wooden (plastic) bridge out there and Dragon has a German Pontoon Bridge that might bear the weight of a Sd.Kfz 250. Neither bridge could ever take a medium tank or an assault gun in real life. Trophy Models still has their Bridge System Kit that you can get some mediums on. Back in the dark ages, Custom Dioramics had a stone bridge you could get a small medium across. Of course, you'll still need to build a base for them.

About the only bridge kit out there that could take a Tiger I and that just barely (diorama possibility right there), is the old Kirin European Cut Stone Bridge (in three separate resin kits by the way). This is an engineering marvel. It's a marvel of engineering if you can put it together without creating gaps your can drop a Kübelwagen through!

I'm getting a little frustrated shopping for ready-made bases. My thought was that I don't have room on my shelves for a lot of bases so having one or two generic ones would be nice to show off a single model from time to time. Silly me! I have bought several now, only to discover that their footprint for the armor model is too small for anything but the smallest tanks or soft skins. Tank Workshop makes a couple of road bases that are just about perfect, except they are too small for a medium.

All this is great, as long as you don't want to waste your time, energy, effort and modeling money building Sherman's or T-34's, or Panthers. They were never really popular and who would want to do that?

I would like to suggest that we now have enough little bridges for little vehicles. Could we now see something in say a medium? Think two way streets for width.

—Eric E. Emerson  
EricEE@aol.com

We feel your pain, Eric. Everyone here fondly remembers the Custom Dio Bridge. We also recall seeing many years ago a "Synergy Dios" bridge system that was converted and constructed in three spans with two or three Shermans going across. It was about the same size as the Custom Dio piece (it might have been the same bridge), but it had been widened and linked. Cool.

Resicast of Belgium also makes are really

cool Bailey Bridge. They sell it in sections or as a complete bridge. As you know, these things could hold just about anything, depending on how they were built.

I regard to decent bases; we like the Tamiya pre-fab sheets (cobblestone or brick). These can be used with a variety of bases, including pre-finished picture frames or blank award plaques found at trophy shops.



## Confessions of an 11 Bravo

I've been modeling off and on for about forty years, mostly armor and wood model ships. Although I now live in Canada, I am a U.S. citizen and spent time in the U.S. Army. While in Germany '59-'61, I was assigned to various units. At one time, I was attached to the 3rd Inf. Div. and they were being re supplied with two new M103 heavy tanks for their HQ tank section. These arrived painted in a very flat OD that closely resembled Testors olive drab. Of course, they were immediately repainted in the gloss dark OD that was standard at that time. By the way, almost all of the armor I saw out on war games had been camouflaged with mud to cover most of the markings except the star on the engine deck. This was often done on tanks during WW2, according to some of the older vets I talked to at that time.

Also, I was told German tanks were very often disabled by artillery and destroyed by tank or anti-tank fire later. A short barrage by 155's or even 105's would knock off treads, damage various parts and even injure crews by concussion in some cases.

For your Idea Bank I'd like to add the M56 Scorpion, as once produced in plastic by Adams & Revell. Although it never saw action, it was a very interesting vehicle. Its road wheels were actually tires inflated to high pressure, its treads were rubber, incasing a steel cable, and it was capable of a very high speed for a 90mm anti-tank gun. I once saw four of them going by a platoon of M48A3's in a wet field, throwing a rooster tail of mud that covered them so well they looked as though they were painted brown. The insignia they used was one of the machine-animal constructs, making it look as though it was alive. It would be very interesting to see it done in scale.

—Terrence Tanner



## Jerrycan curious

By any chance, do you guys have photos of a German jerrycan opened up? Millions of jerrycans were used in WW2 and nobody ever bothered to photograph one with the lid open?

—Daniel Jarvis



You want it, we got it. Here are two photos we took a while back at a reenactment. These two cans are both stamped WASSER (water) but they functioned the same as their petrol-bearing brothers. Of particular interest is the red



coating inside the mouth of the can. Also on display were some 10-litre TRINKWASSER (drinking water) cans. These are much harder to find in 1/35 scale, but

there are some in Dragon's Afrika Korps figure set, #6063.



## Shameless self-promotion and we didn't even ask

Having recently purchased a copy of *Movers, Haulers, Pushers and Shakers*, enclosed please find payment for three additional copies. It is refreshing to know there is a publishing company that understands models and modelers and is not attempting to pump out pathetic books to make a buck. I personally feel that far too many companies have jumped on the 'modeling book bandwagon' when it is clear their 'books' (and I use that term loosely) are nothing more than an attempt to promote their own products and organizations. Continued success to you and yours, and I look forward eagerly to your next publication.

—Thomas Bergstrom

Ouch! Well, we ain't the fastest, but we like to think our books and magazines are always worth the wait. Our *Kübelwagen Special* will be available by the time you read this and the *Tiger* book is just around the corner.



## What's wrong with sprue?

Sometimes your writers mention stretched sprue. I haven't been modeling very long, but what the heck is that?

—Gary Bonney

Well, we first learned about stretching sprue from Shep Paine back in the '70s. The stuff that plastic model parts are attached to is referred to as runners, trees, or sprue. Find a nice long straight piece and hold it over a candle (light the candle first, then be careful). Slowly twist the ends of the sprue in both hands and as it heats in the center you can pull it and elongate the plastic. The proximity to the candle and the more you pull, determines how the sprue reacts. Try it once and you'll figure it out quickly. Having various thicknesses of miniature rod around is very handy. We recommend keeping a nice selection of sprue on hand. Every time you build a kit, keep the good sprue, which are usually the longer, straighter pieces.



## Got a problem with any of this?

Send those comments to: Mail Sack, Military Miniatures in Review or discuss complaints, problems, wisecracks, Don Henley, etc. via the Internet. Find us at the handle: mmir35701@aol.com

Letters are sometimes edited for brevity, grammar, spelling, national security concerns and other important stuff.

We sincerely regret that we rarely, if ever, are able to personally enter into correspondence with our readers.



# The Year in Preview



## Aber

The wacky madmen of photo-etch have been a bit quiet lately and now we know why. Check out all the new brass heading your way. 35081, **Jagdpanzer IV L/70 (A)** (Dragon Zwischen Losung), \$16.49; 35082, **Jagdpanzer IV L/70 (V)** (Dragon/Italeri/Tamiya), \$16.49; 35084, **Sd.Kfz. 250/1 Alte Volume 1** (Dragon), \$22.99; 35085, **Sd.Kfz. 250/1 Alte Volume 2** (Dragon), \$11.99; 35086, **2.8cm sPzB41 A/T** (Dragon), \$9.99; 35087, **Renault FT-17 (RPM)**, TBA; 35088, **Sd.Kfz. 251/1** (Tamiya), TBA; 35089, **20mm Flakvierling 38** (Italeri), TBA; 35090, **Steyr 1500 Kommand** (Tamiya), TBA; 35A68, **Hand Tools**, \$9.99 (trust us, you're gonna want about 10 of that one); 35A80, **Fenders for Jagdpanzer IV L/70 (V)** (Dragon/Italeri/Tamiya), \$16.49; and 35A82, **Side skirts for Jagdpanzer IV L/48 & L/70 (V)** (Dragon/Italeri/Tamiya), \$22.99. And if you went deep and snagged Tamiya's 1/16th Tiger, you'll be pleased to know that Aber is producing several sheets for it. Get 'em wherever cool stuff is sold.

## AFV Club

After a long silence, four new injection tracks are now rumbling their way to your workbench. 35032 is **M4 Sherman T80 Tracks**, \$16.98; 35033 is **M4 Sherman T84 Tracks**, \$16.98; S09 is **Leopard 2 Tracks**, \$18.98; and S10 is **M113 AIG NATO Tracks**, \$18.98. And they're all workable. Hoo-ah.

## Alan

Has the new Tamiya kit revived your Marder fever? Alan has just released 011, **Sd.Kfz. 131 Marder IID** at \$24.98. You should also check out their other new kit,

## 012 German 15cm

**SIG33B Self-Propelled Gun**, at \$28.98. And Eduard's got a brand new etch set for that one. Available now through VLS and fine shops everywhere.

## Armour Brigade Models

Here's a neat idea. Instead of converting those old Tamiya nasties, Armoured Brigade has gone and released two brand spanking new (and correct) versions of the U.S. M3 tank. The first is **ABM020, M3 Grant Complete Kit**. This complete kit is based on an all-new and correct master pattern and the kit even includes the RHPS WE210 "waffle" pattern tracks, all for \$100.00 (\$150.00 in Canada). The second kit is **ABM021A, Early Production M3 Complete Kit**. As the name states, this is the earlier version of the Lee (also all new stuff) and it includes the T51 version of the RHPS track also for \$100.00 (\$150.00 in Canada). This same Lee kit is also available without the RHPS track for \$90.00 (\$135.00 in Canada). Its stock number is **ABM0021B**. Armour Brigade is also considering other conversions and we'll keep you up to date as news develops.

Other new and future goodies from Armour Brigade are as follows. **ABM022, Armoured FAMO 18-ton half track w/ Falk 37 88 AA Gun** is slated for July release. **ABM023A, an Early Production M4A1 Hull w/Direct Vision Slits & Early Suspension**

**System** is also on for July. This version is the type used by the Americans in North Africa and Sicily. **AMB023B** is an **Early Production M4A1 Hull w/Direct Vision Slits & Early Suspension System, British Type**. **ABM024, M10A1/M35 Prime Mover Upper Hull** will be a conversion for the AFV Club when it becomes available. **ABM025, 2cm Flak 38 Ammo Trailer** brings up the rear (so to speak). All of these new items are slated for July release and the prices are all TBA.

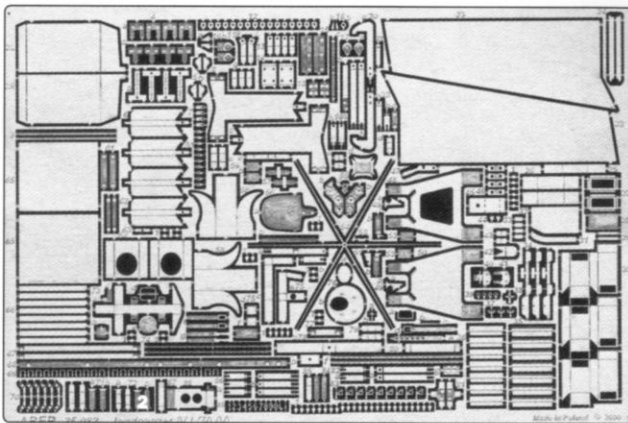
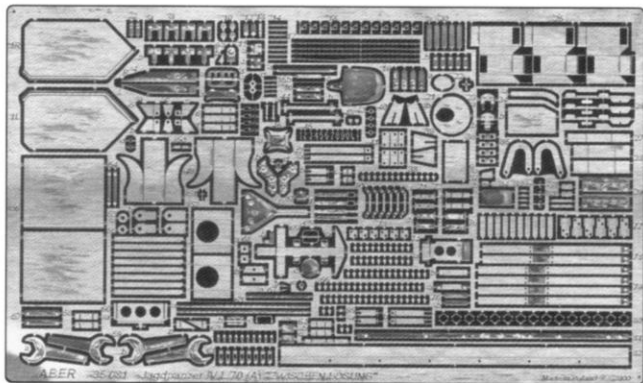
For more information on Armour Brigade Models, contact them at P.O. Box 35163, Westgate P.O., Ottawa, Ontario, Canada K1Z 1A2. E-mail: [acpabmsid@igs.net](mailto:acpabmsid@igs.net).

## Custom Dioramics

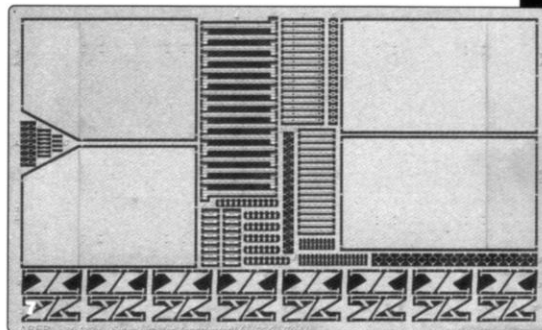
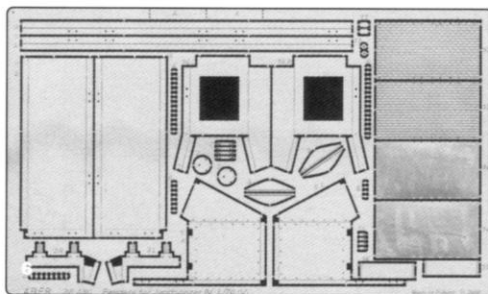
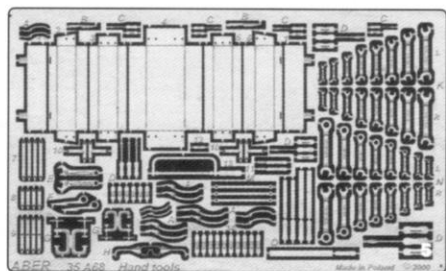
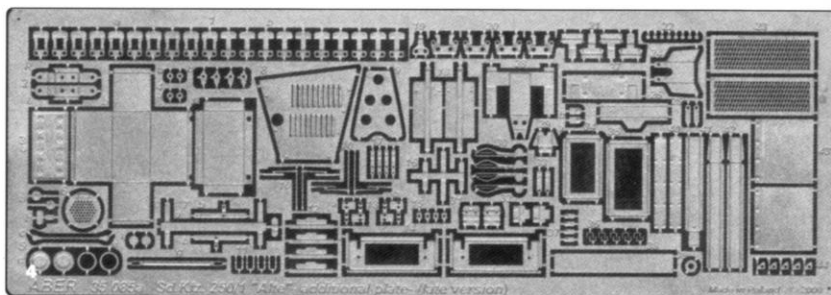
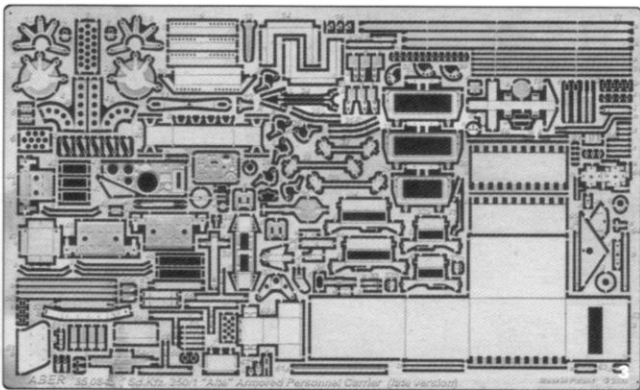
VLS' own Custom Dioramics continues their onslaught of gotta-have-'em diorama goodies. Here's what's in the pipeline. There's a whole pile of 1/35 new treats pouring out of Custom Dioramics these days. In the ceramic department, it's 1121, **Ruined Street Corner/Courtyard** (14 ceramic and three resin pieces), \$19.95; 1122, **European Train Station** (Intact, with resin details), \$26.95; 1123, **European Train Station** (Ruined, with resin details), \$18.95; 1124, **Two-Story European Stone Shop** (do they sell stones there?), \$18.95; and 1125, **Train Station Signal Tower** (with resin details), \$26.95.

New printed accessories are plentiful and retail for \$5.95 each. These include 5021, **Road Signs Battle of the Bulge**; 5022, **US & German Military Road Signs**; 5024, **German/Italian Propaganda Posters**; 5025, **Russian Propaganda Posters**; 5026,





1. Aber's Panzer IV L/70 (A) set. The usual madness. 2. The Panzer IV L/70 (V) set from Aber with everything you'll ever need. 3. The first of two volumes from Aber for the 250/1, Alte from Dragon. 4. Aber's 250/1, part two. 5. A fabulous looking little set of etched tools from Aber. 6. A complete set of rear fenders for the L/70 series from Aber. 7. Aber's extensive L/70 side skirt set.



## French/Benelux Posters; and 5027, German Propaganda Posters.

Their latest resin gear includes 6024, **European Concrete Road Sign Frames & Posts**, eight for \$10.95; 6025, **European Bathroom with Fixtures**, \$22.95; 6026, **Train Station Interior Detail Set**, \$17.95; 6027, **Train Station Exterior Detail Set**, \$19.95; 6028, **European Store Interior** (62 pieces!), \$39.95; 6029, **European Utilities Brackets**, TBA; 6030, **Train Station Platform** (resin and ceramic), \$19.95; 6031, **European Concrete Telephone Poles**, two for \$10.95; 6033, **Urban Street Accessories**, \$10.95; and 6034, **Sidewalk Pedestal Clock** (with etch), \$11.95.

New polyfoam bases have also been announced. 7002 is a **WWII Flak 20/37 Emplacement/Bunker**, \$29.95. 7005 is **Train Station Base**, measuring 23"x15" with rail bed, tracks and platform sections for \$39.95. 7006 is **Train Tracks with Gravel Bed**, \$17.95. Future releases (prices TBA) include 7003, **Urban Intersection (Basic)** and 7004, **Urban Intersection (Deluxe)**.

Now here's a clever idea. Take all these train items, put 'em in one huge box and sell 'em as a set. You know you always wanted to build a train station, so here's your chance. In the new VLS Super dioramas Series, SD 001, **Train Station Complex**, contains the above items: 1122, 1125, 6026, 6027, 6030, 6034 and 7005. You can save \$20 and have it all for \$144.95.

## Czechmaster CMK

Following the success of their two 1/35th VW Beetles, CMK has come around with five more releases. 3008 is **VW Typ 92 SS Interior Set** featuring etch and resin parts (including seats and doors) for \$9.98. 3009 is **VW Beetle Engine Set**, just the ticket for any of the Beetles and includes a resin trunk for \$14.98. 3010 is **VW Kastenwagen Conversion Set**, injection

parts which allow you to create the box van variant with your Tamiya Kübelwagen for \$9.98. 35017 is a complete kit, **VW Typ 230**, providing the earlier Type 82E kit with resin conversion parts for the wood gas generator version. It also includes etch details and is yours for \$19.98. And 35018 is another complete kit, the **VW Typ 83 Kastenwagen**, a Type 82E kit with conversion parts for the Reichspost or ambulance box van. Includes modified body, already cut down and this is where the box for the Kübelwagen conversion comes from. Retail is also \$19.98. You'll find full-blown usage of all these items in **Amersand's Modeler's Special Edition Guide to the Kübelwagen**, coming soon to shelves everywhere.

CMK has also released a full resin kit (A013) of the **Studebaker US 2.5 ton 6x6 Truck**. Retail is \$109.98. We haven't had a peek yet, but you can bet we're hot on the trail.

## Dragon

Two more figure sets announced last year have just hit the market. Look for 6147, **7.5cm Leichtgeschütz 40 with Crew** (three Fallschirmjägers), \$12.98; and 6148, **US Army Airborne (Operation Varsity 1945)** (four paratroopers), \$7.98. Available everywhere.

## Eastern Express

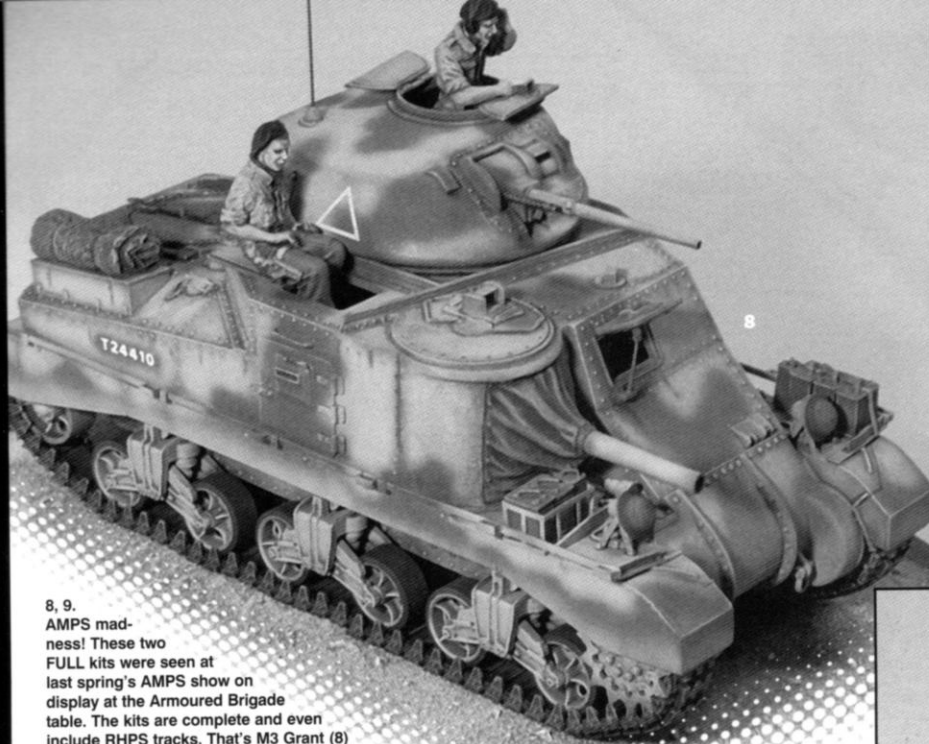
Eastern Express continues to fill in a lot of gaps in the 1/35th WWII Russian market. Here's a look at what's coming. 09, **BA-3 Soviet Heavy Armored Car**, \$27.95 and 10, **BA-6 Soviet Heavy Armored Car** (formerly from Alan), \$27.95, plus these future releases (prices TBA). 12, **ZIS-5V**; 13, **ZIS-5V Fuel tanker**; 14,

**ZIS-42 Halftrack**; 15, **ZIS-44**; 16, **BRDM-1**; 17, **BRDM-U**; 18, **BT-7 '35 Late Version**; 19, **BT-7A**; 20, **PT-76B**; 21, **BTR-80**; and 22, **ASU-85**.

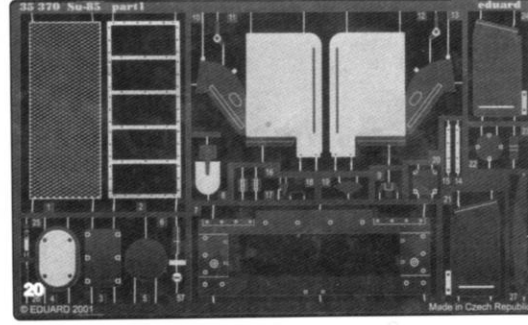
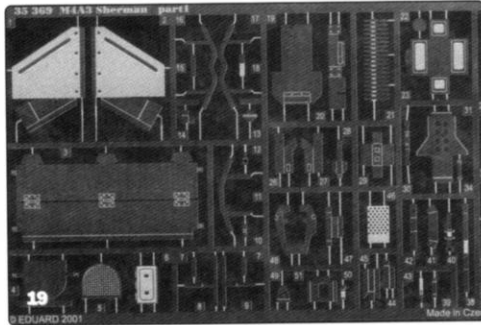
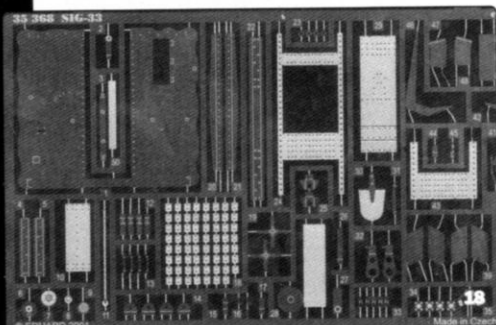
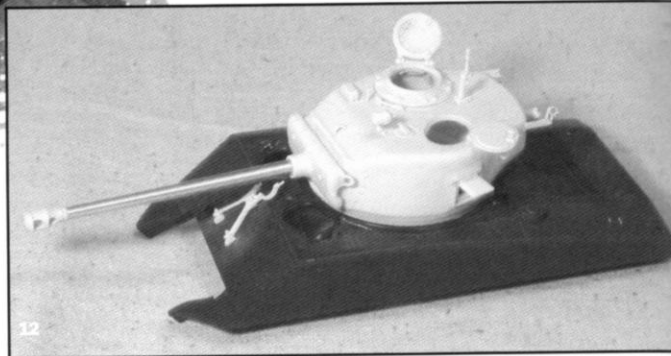
## Eduard

Think you've seen it all? Think it's all been done? Better have a seat - here's the latest 1/35 stuff from Eduard. In the photo-etch detail set department, it's 35346, **M1A Abrams Armour Fittings** (Dragon), \$8.99, a small sheet of riveted mounting strips; 35347, **Willis Jeep** (Tamiya), a revised set for \$19.99; 35352, **WC-57 Command Car** (Skybow), with Express Mask, \$19.99; 35354, **Panther G Early** (Tamiya), \$22.99; 35349, **Flak 88** (Tamiya), revised, \$19.99; 35355, **Kübelwagen** (Tamiya), revised set with Express Mask, \$14.99; 35356, **Sd.Kfz. 250/3 GREIF** (Dragon), \$19.99; 35357, **StuG IV** (Tamiya), revised set with Express Mask, \$19.99; 35358, **LVT-4 (Italeri)**, with Express Mask, \$19.99; 35360, **M1A Abrams Armour Fittings** (Tamiya this time), \$8.99; 35361, **StuG IV Schurzen** (Tamiya), \$19.99; 35362, **Panther Late** (Tamiya), \$22.99; 35363, **Panzer III/IV Hull Mounting Brackets**, \$14.99 (if your Panzer/StuG IIIs and IVs are missing the brackets between the fenders and hull, here you go); 35364, **Bren Carrier Mk.II** (Tamiya), revised, \$19.99; 35365, **StuG III G** (Tamiya), revised set with Express Mask, \$19.99; 35367, **LAV-25 Mortar Carrier** (Italeri), \$19.99; 35368, **SiG 33** (Alan), \$14.99; 35369, **M4A3 Sherman** (Tamiya), revised set with Express Mask, \$19.99; 35370, **SU-85** (Tamiya), \$19.99; 35372, **StuG IIIG Schurzen** (Tamiya), \$19.99; 35373, **Panther G Late Horizontal Zimmerit** (can't wait to see these!), \$19.99; 35377,





8, 9. AMPS mad-ness! These two FULL kits were seen at last spring's AMPS show on display at the Armoured Brigade table. The kits are complete and even include RHPS tracks. That's M3 Grant (8) and M3 Lee (9). 10. This is CMD's new Marder III interior in resin (not listed in the text). 11. CMD's early T23 Sherman turret from CMD. Both turrets were listed in issue 25 and they are CMD-32 and CMD-35 respectively. 13. Lots of pretty pieces for the Dodge Command car from Eduard. Check out the dash. 14. The "just in time" set from Eduard for Italeri's LVT. 15. StuG IV Schutzen from Eduard. 16. This time from Eduard it's a Panther Late G. 17. An extensive sheet for the LAV-25 Mortar Carrier from Eduard. 18. Check this out, complete rehabilitation. Eduard's very comprehensive sheet for the Alan Sig 33. 19. This is a revise M4A3 set for the Tamiya kit from Eduard. 20. The older Tamiya Su-85 gets the Eduard treatment. 21, 22. Two of Eduard's new German stencil sets. 23. It's U.S. this time, with various registration codes from Eduard. 24. Eduard's German License plates.



M4A3E8 Sherman (Dragon), \$19.99; and 35380, *Sturmpanzer IV*, \$11.99.

The latest Eduard Express Masks in 1/35 scale are as follows. XT030, *Tactical Symbols 1935-42*, \$14.99 (60 individual etch stencils with masking strips to hold them while you airbrush); XT031, *Tactical Symbols 1942-45*, \$14.99 (ditto, later versions); XT032, *Divisional Insignia Waffen-SS 1940-45*, \$14.99 (announced but not seen yet); XT034, *Panzer Grenadier Division Markings*, \$14.99 (same story); XT036, *Leopard 2A5 Periscope Masks* (Tamiya), \$1.99 (small masks to cover the scopes while you paint); XT037, *US Army Register*, \$14.99 (etched number and letter stencils plus masking strips to hold 'em - awesome!); and XT038, *German License Plates*, \$19.99 (oodles of full and partial etched license plate stencils with all the prefixes - simply fabulous).

## Elefant

Elefant is finally letting loose with some of their many new releases. A variety of tow cables are now available, including 35543, *Dragon Wagon*, \$14.95; 35817, *T-72*, \$4.95; 35818, *Leopard 2A5*, \$4.95; 35819, *Merkava III*, \$5.95; 35820, *M1A2 Abrams*, \$4.95; and M88, \$10.95. 35532 and 35533 bring two styles of *Tow Cable Ends*, 40 per set at \$14.95. Also coming is 35547, *German Fire Extinguishers (Late)*, five for \$7.95. Elefant is brought to you exclusively by VLS and you can check with them for a ton of still pending Elefant items.

## ICM

The ICM output has slowed considerably in the last couple of years (we're still a little giddy about the Lynx), but hopefully they're gearing up for another onslaught. Here's their current list of forthcoming 1/35 releases. 35111, *MSTA Soviet 152mm self-propelled Howitzer*, TBA; 35171, *Cromwell Mk.IV British Cruiser*, TBA; 35181, *Cromwell Mk.VI British Cruiser*, TBA; 35189, *Russian/Soviet 76mm Field Gun 1902/30*, \$8.98; 35231, *Pz.Kpfw. II Ausf. D*, \$22.98; 35241, *Pz.Kpfw. II Ausf. F Flamingo*, TBA; and 35361, *Panther Ausf. D*, TBA.

## Jaguar

In addition to the new figures in the Mini-Men section, Jaguar has cranked out another spiffy base for your vignette needs. This time it's 63536, *Trench Base*, a two-piece chunk o'resin featuring slats, posts and sandbags, price TBA. They've also re-released 61602, their 1/16th *Outhouse*, a blast from the past to add a whimsical corner to your next large-scale diorama.

## Karaya

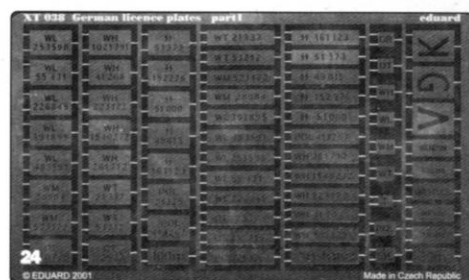
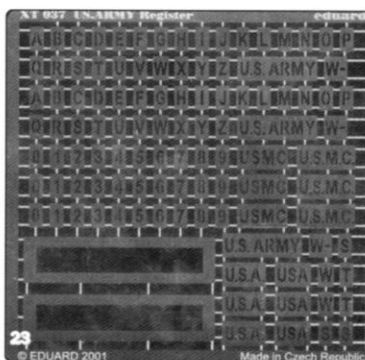
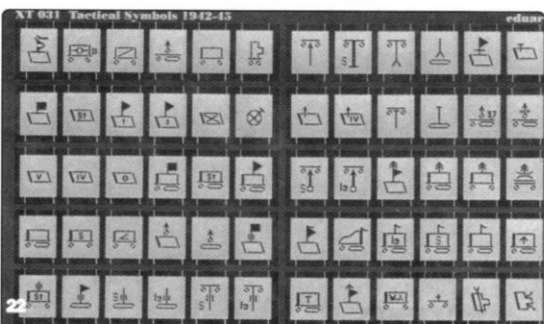
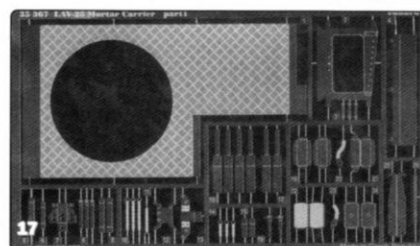
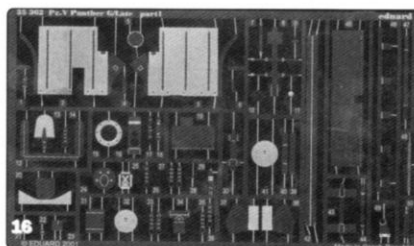
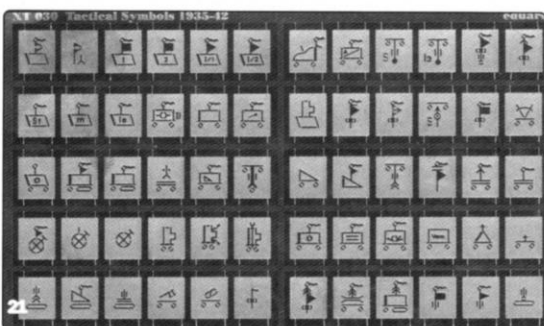
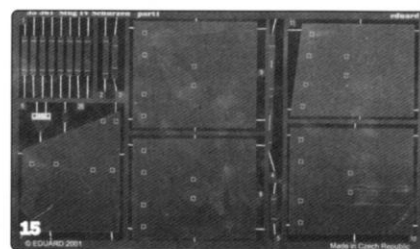
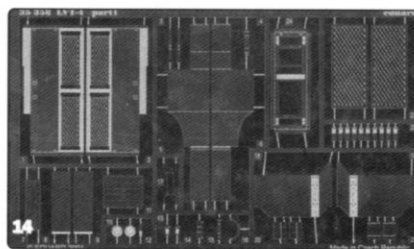
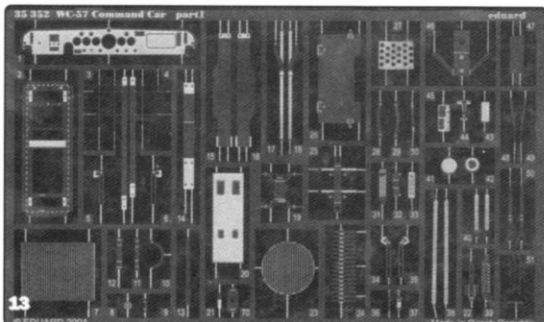
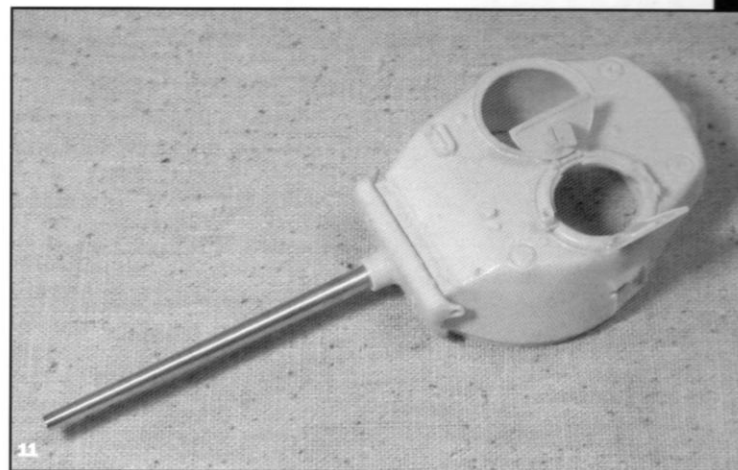
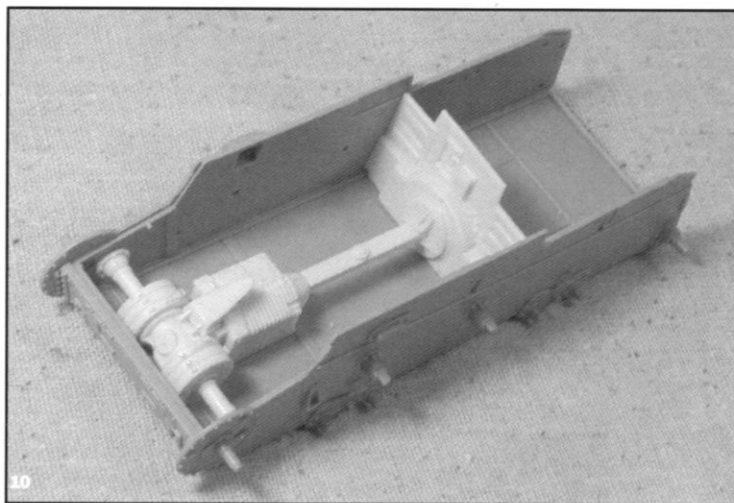
This Eastern European company is imported to North America by Air Connection and features a series of weathered copper tow cables. Not just any cables mind you; these are braided and twisted in particular styles to match particular eras. Amazon! Here's the list. Set L, *Left Twist German WWII AFVs*, is a master set with 7 sizes, each 12" long, for \$22.99. Ditto for Set R, *Right Twist Allied WWII & Modern*

AFVs, \$22.99. Or, you can buy the cables individually as follows. Keep in mind that the lefties are German and the righties are Allied. 001L, .6mm x 180mm, \$5.99; 001R, .6mm x 180mm, \$5.99; 002L, .7mm x 180mm, \$5.99; 002R, .7mm x 180mm, \$5.99; 003L, .9mm x 180mm, \$5.99; 003R, .9mm x 180mm, \$5.99; 004L, 1.1mm x 180mm, \$5.99; 004R, 1.1mm x 180mm, \$5.99; 005L, 1.25mm x 180mm, \$6.99; 005R, 1.25mm x 180mm, \$6.99; 006L, 1.35mm x 250mm, \$9.99; 006R, 1.35mm x 250mm, \$9.99; 007L, 1.5mm x 250mm, \$9.99; and 007R, 1.5mm x 250mm, \$9.99.

## Legend

This Korean firm has a small output, but we're always impressed with their products. And six new sets have now arrived. 1015, *Sherman Accessory Set #1*, includes a complete resin T44 Sherman turret, hedgerow cutter and sandbag banks for \$65.98; 1016, *Willys MB Accessory Set*, is a comprehensive set featuring resin and etch details, with .30 and .50 cals, cargo rack, covered windshield, radio, wheels with chains and more for \$36.98; 1017, *British SAS Jeep Conversion*, is another resin and etch winner with .30 and .50 cals and a ton of cargo and jerry cans at \$27.98; 1018, *Israeli M151A2 Shimira Jeep Conversion*, provides a full resin and etch makeover for your Tamiya MUTT with wheels, roll bar, two M60s, radio, cargo and more, \$30.98; 1019, *T44 Sherman Turret*, delivers the turret from set 1015 for \$25.98; and 1020, *US Army Vehicle Accessory Set*, is 26 pieces of resin stowage for \$12.98. Legend comes to us





exclusively through Squadron/MMD.

## ModelKasten

You just gotta love these guys. They reach modelers of all interests by bouncing back and forth between the obscure and the obvious. Their latest sets of individual injection tracks are SK-49, **Cromwell Tracks**; SK-50, **Japanese Type 95 Tracks**; SK-51, **Panzer II Luchs**; SK-52, **Japanese Type 74**. Down the line and as of yet unnumbered will be **Stuart** and **Panzer II D** tracks. The Panzer II D tracks will be similar to the earlier incarnation in the K line and will feature roadwheels, as well. Prices and other information are TBA.

## MR Modellbau

MR of Germany has just released eight new resin sets for your modeling pleasure. Check 'em out. 35136, **Fuchs Wheels (Bundeswehr Combat Tires)**,

\$19.95; 35137, **Unimog U1300 Cargo Body Walls**, \$15.50; 35138, **Luchs Wheels (Bundeswehr Combat Tires)**, \$21.95; 35139, **Israeli M113A1 Workshop Conversion**, \$26.95; 35140, **Opel Blitz Wheels (8-hole Rim)**, \$21.95; 35142, **Canadian Army M113A1/A2 Update** (for Tamiya, Italeri and Minicraft), \$19.95; 35144, **Exact Drive Sprockets for Israeli M60 Patton (Merkava Tracks)**, \$10.95; and 35145, **Suspension Detail Set for M60A1/A2/A3**, \$19.95.

## Plus Model

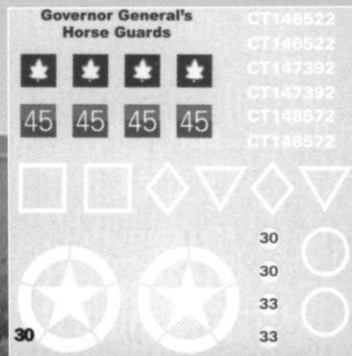
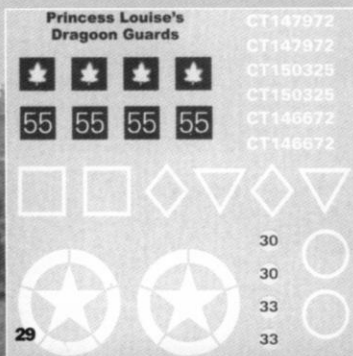
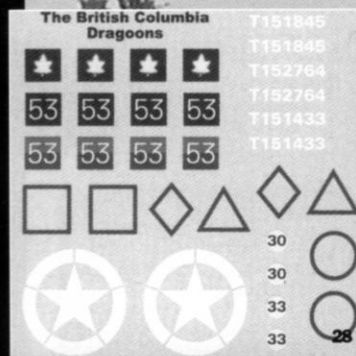
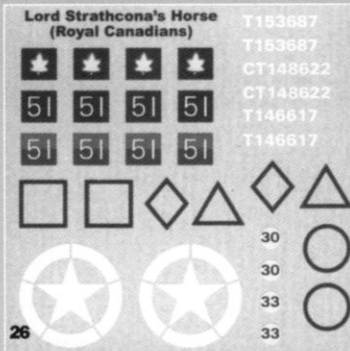
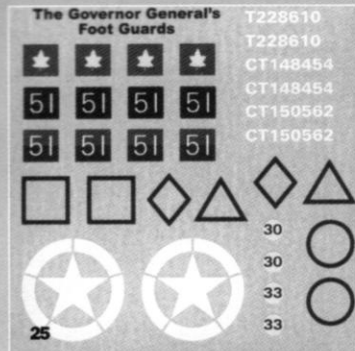
Two new resin and etch vehicles have just landed from Plus in the Czech Republic. 35100 is the **Skoda Superb 3000 Type 952 'Kübelwagen' Kfz. 15 Cabriolet** and 35103 is the **Skoda Superb 3000 Type 952 'Kübelwagen' Kfz. 15**. What's the difference? The Cabriolet is a slightly more elegant version with stylized convertible shell top and the standard issue sports the more standardized military top. Skoda cranked out some 1,500 of these, with most going to SS units. It falls into the medium personnel car class, very

similar to the more familiar Horch. VLS is bringing 'em in at \$99 a pop. Just announced are 35061, **German Lanz Bulldog 30HP tractor**, \$72.95 and 35098, **Bedford QLR Body #3**, \$74.95. Look for a full Skoda review in a forthcoming issue of MMiR.

## Real Models

There's a heapin' helpin' of new goods on the way from this German firm, spread across a variety of series. Better pull up a chair for this one. In the etch department, it's 001, **Stencils US Army WWI (Stars, Numbers, & Letters)**, \$15.95; 005, **Stencils German WWII (AFV Crosses)**, \$11.95; 006, **Stencils German WWII (AFV Numbers & Letters)**, \$19.95; 007, **Stencils German WWII, License Plates**, \$15.95; and 008, **Stencils German WWII (SS Divisional Markings)**, \$15.95. Forthcoming resin goodies soon to be released include 35065, **Studebaker Conversion for GMC (Tamiya or Italeri)**, \$49.95; 35066, **Willys TW-6 2-ton Wood Trailer**, \$46.95; 35067, **M-1037 Shelter Carrier Conversion**, \$46.95; 35068, **S-250 Shelter Carrier Conversion**, \$46.95; 35069, **M969 Fuel Trailer**, \$96.95; 35070, **M88A2 Hercules Conversion (for AFV Club)**, \$72.95; 35071, **Studebaker 6-ton Open Cab Conversion**, \$42.95; 35072, **HMMWV Avenger System Conversion**, \$61.95; 35073, **GMC AFKWX 353**





25-30. Ultracast's new and beautifully rendered line of waterslide decals covering markings for Canadian armored units in Northwest Europe 1944-1945. Very well done and much needed. 31. WWII in 1/16th scale! Tamiya Tigers and Shermans duke it out for the title at last springs TamiyaCon in California. All the tanks are equipped with the new "Battle System" infrared light receiver unit described in issue 24. This new module allows one tank to disable another temporarily. As you can see, this unit works with the newest incarnation of the Sherman, described in the text and seen in the introduction to this section. Also see the article

on Tamiya's 1/16th scale tiger on page 38. 32. The new Elephant photo-etched set from Warriors.



with Open Cab, \$299.95; 35074, GMCAFKWX 353 with Steel Cab, \$299.95; 35075, Autocar 7144 Tractor Open Cab, \$120.95; 35076, Federal 94x43 Tractor Open Cab, \$120.95; 35078, Autocar U-8144 Tractor Wrecker, \$142.95; and 35079, Semi Trailer for Autocar/Federal, \$76.95. New resin accessories include A35040, FAMO Front Wheels, \$10.95; A35041, Dragon Wagon Wheels, \$23.95; A35042, US 5-ton 'Big Foot' Detail Set, \$29.95; A35043, GMC Munitions Cargo, \$27.95; A35044, GMC Fuel Cargo, \$27.95; A35045, Opel Blitz/Mercedes Fuel Cargo, \$27.95; and A35046, Opel Blitz/Mercedes Munitions Cargo, \$27.95. Real Models is distributed in the USA by VLS.

## Roy

These guys continue their march into resin history with complete kits to make you drool. Four of their latest are 0008, **Diamond T Wrecker**, \$185.95; 0009, **Diamond T Cargo**, \$185.95; and 000X, **75mm Pak Howitzer**, \$24.95.

## S&T Products

Over the last three years S&T of California has established an international reputation for their wood bases. Their own line of resin figures continues to grow with some very cool WWII stuff. Just released is 16006, their **120mm scale Panzer III J with Crew**. If you don't have room for a full-blown tank, or if you appreciate quality, then you'll have to have this. The kit includes a cutaway of an Afrika Korps PzKpfw IIIJ featuring full turret, plus partial hull and tracks. Andy Meyer designed the tank and John Rosengrant sculpted the two German crewmen. This item is avail-

able directly from S&T for \$180.00 and you can also purchase a custom wood display base for \$55.00. The next issue of MMiR will feature a complete article on this amazing release. And check out Mini-Men for their 16006, **101st Airborne Normandy**, which retails for \$40.00.

## Scale Line

Oooh la la. Scale Line spreads the resin love across international boundaries and interests with more spectacular goodies. Be on the prowl for 35010, **Military Lift Truck**, a handy forklift for \$54.95; 35029, **FAMO Crew**, four figures for \$32.95; 35032, **Armoured Car Otter 1 Mk.I**, \$98.95; 35033, **Morris Commercial CS8 Water Tank Truck**, \$98.95; 35038, **Willys Jeep Wheels with snow chains**, \$13.95; and 35040, **Diamond T M20 Recovery 40-ton Transporter with Trailer**, \$400.00.

## Skif

These guys have been busy! Here are their newest injection kits. 211, **BTR-152K Soviet Armoured Car**, \$29.95; 212, **T-84 Modern Ukrainian MBT**, \$32.95; 214, **MTLB**, \$34.95; 215, **Soviet 122mm Howitzer D-30**, \$18.95; 216, **Light Rocket Landing Complex 9K35 'Strela 10SW'**, \$39.95; 221, **T-55A Soviet MBT**, TBA; 222, **T-55AM Soviet MBT**, TBA; 223, **BMD Landing**

Vehicle, TBA; 224, **ZPRK 'Tunguska' Anti-Aircraft Gun/Missile System**, TBA; and 502, **Pressure Roller Device for T-64A/T-64B/T-64BW**, \$9.95.

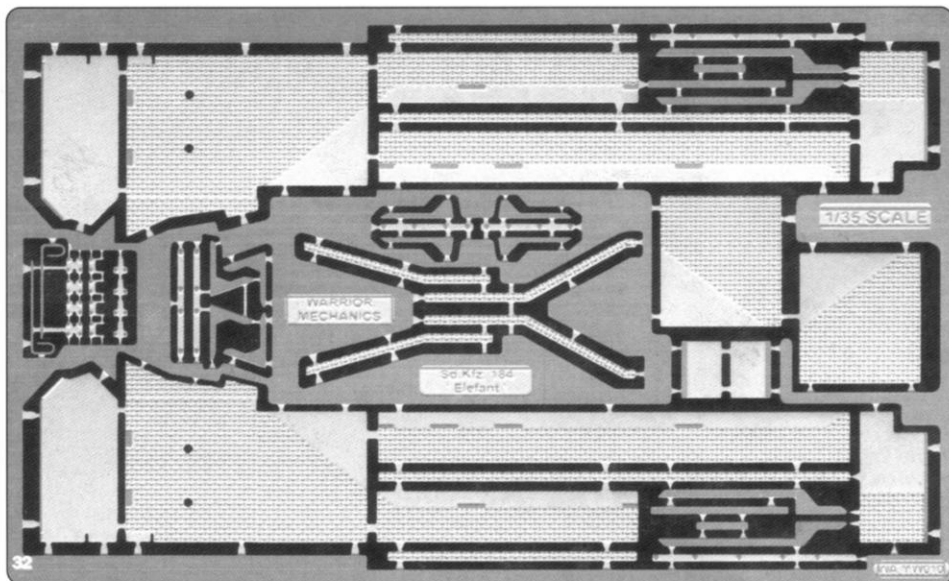
## Sol

Sol has just introduced three more new items to their growing line of 1/35th figures. 3115 is **101st Airborne with .50 Cal.** featuring a WWII paratrooper hunched over the MG as he whittles down the enemy. Retail is \$19.98. 3115 is **Lady and German General**, a \$16.96 set featuring two sitting figures presumably having a cocktail. A dog is also included for fun. And if you need furniture for them to sit on, check out 4016, **Table and Chair Set**, a photo-etched table with four chairs for \$15.98.

## Start Over

Got 'em yet? The first series of metal shields went over so well that they've now released a series of smaller versions. These are ideal for figure bases or adding a nice touch to the corner of your armor or diorama base. The small versions measure 1"x1.25" and are .125" thick. Look for MS00, **SS Shield with Sieg Runes**; MS01, **1st SS Panzer Division**; MS02, **2nd SS Panzer Division**; MS03, **3rd SS Panzer Division**; MS05, **5th SS Panzer Division**; and MS12, **12th SS Panzer Division**. Start Over is an exclusive VLS line





and the mini shields retail for \$3.95 each.

#### Skybow

Quicker than expected, Skybow has announced the 6x6 version of the Dodge truck, the WC-63. The kit's a stunner and includes all the detail of the previous kits. This version even includes a beautifully rendered soft-top that is delicately molded in super thin styrene. Wow! This will be kit number SK 3504 and it will retail for \$37.95. The exact release date is still TBA.

#### Tamiya

Tamiya's 1/16th static Kübelwagen has now reached U.S. shores and you won't want to miss it. Product number 36202, **German Kübelwagen Type 82 Africa-Corps** is a complete kit including a gorgeous engine, personal equipment, jerrycan and sitting driver figure. The earlier Rommel release is also included. The Continental desert balloon tires are included in soft rubber. If you've tackled the earlier resin offerings from Kirin and Verlinden, prepare to have your world changed. This will hopefully open the doors for more 1/16th vehicles to complement Tamiya's figure line. For a complete look at this beauty, check out **Ampersand's** forthcoming *Modeler's Special Edition Guide to the Kübelwagen*.

Tamiya has also dusted off the original 105mm **M4 Sherman in 1/16th scale** and added many of the features that were included in the large RC Tiger, such as a sound unit and other gizmos. This was the big new item this spring and U.S. release dates and prices were not available at press time.

The newest in 1/35th scale and Tamiya's only new armor piece in that scale announced at the recent Shizuoka Hobby Show, is another incarnation of their Bren Gun Carrier. Kit 35249 is titled **British Universal Carrier Mk.II "Forced Recon."** The kit will include a few new figures and other gear. Retail is still TBA.

#### Tank Workshop

TWS has just released three new resin wheel sets for your modeling pleasure. 023 is **BA-10 Armored Car Wheels & Tires**, \$15.00; 1051 is **Opel Blitz Wheels with Civilian Pattern Tires**, \$12.00; and 2059 is **18-ton FAMO & Trailer Wheels and Tires**, \$20.00.

#### TechStar

VLS' photo-etch branch has two new diorama sets to give you a little window dressing. The latest are 1029, **European Plain Wrought Iron Window Guards (Small)**, \$9.95; and 1030, **European Ornate Wrought Iron Window Guards (Large)**, \$9.95.

#### Ted Dyer Inc.

Two new master patterns were recently on display at the 2001 AMPS national. These both represented Japanese tanks from WW2 in 1/16th scale. They both

were very intriguing looking and they are the **Type 92 tankette** and **Type 89-B Medium tank**. Both will be offered as complete kits and the price will be \$225.00 and \$400.00 respectively. A bit steep in price perhaps, but this generally comes with the resin territory.

For more information, check with Ted Dyer, Inc. P.O. Box 1030 Roslyn, PA 19001-9030 or at [japanesearmorworking.com](http://japanesearmorworking.com).

#### Tiger Productions

Tiger is now offering a rather extensive line of plaster buildings and accessories. This line is loosely based on the old Dutton line of buildings, but has been improved and enhanced. Although too extensive to list here, the complete line includes some very interesting complete building kits, which can be constructed undamaged and many of them are modular in nature and can be combined to create ultra-realistic cityscapes. The line also contains a vast array of accessories, such as cobblestone street sections, sidewalks, rubble, roof tiles, etc.

For more information and a complete catalog, contact Tiger Productions, 5 Thompson Road, Patterson, NY 12563. Fax (854) 278-9265. Web site: [www.best-web.net/~panzer/](http://www.best-web.net/~panzer/).

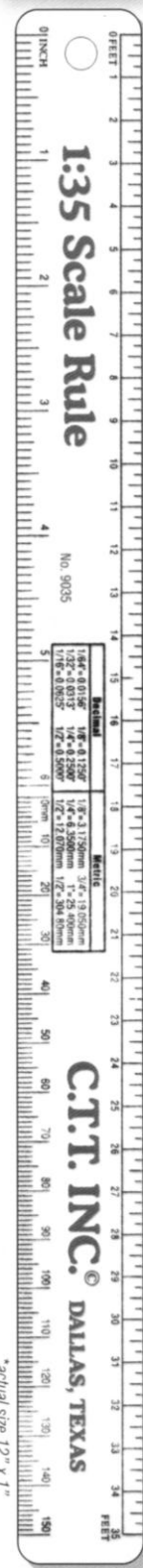
#### Ultracast

If 'other allied' subjects are your forte, then this line is where you want to be. 135013 provides **ten 1-Gallon Oil Cans/British WWII** for \$5.95. In the decal department, there's a fine selection of small full-color decal sheets at \$4.95 each. These all provide unit specific markings for Canadian armor units operating in Northwest Europe in 1944-45. Look for D35013, **The Governor General's Foot Guards**; D35014, **Lorth Strathcona's Horse (Royal Canadians)**; D35015, **8th Princess Louise's (New Brunswick) Hussars**; D35016, **The British Columbia Dragoons**; D35017, **The Governor General's Horse Guards**; and D35018, **4th Princess Louise's Dragoon Guards**.

#### Warriors

Here are four new releases from the Mechanized Warriors series. MW008 is **Dodge WC-51/52 Canvas Roof**, a two-part resin top for the Skybow kits (plus a covered winch reel) for \$24.95. MW009 is **German 7.5 Infantry Gun**, another blast from KMC's past at \$32.95. MW010 brings a heavy duty etch Elephant Detail Set comprised mainly of fenders at \$22.95. And MW011 brings their third foray into the M109 with **M109/A1/A2 Lower Fighting Compartment**; a resin set giving you all the goods from front to rear, including the driver's area, at \$44.95. In the regular 1/35th line, Warriors has just released **Ruined Brick Entranceway**, six hunks of resin rubble, including a portal window, interior and exterior walls and partial floor for \$16.95.

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49 pages, B&W with color plates

ISBN 0-89747-426-0

\$8.95

AH, YES. THE MORE things change, the more they stay the same. It's always nice to know that one can depend on Squadron to deliver a quality, value

priced reference. It seems like they've been doing it



forever. Italian armor is one of those fascinating little niches that some guys just can't get enough of. Surprisingly, there is virtually nothing out there in the way of quality photo reference. Enter our old friends.

Squadron serves up the usual 50-page load of goodies composed of black & white photos and smashing looking color plates. The book covers the M11-39, M14-41 (Carro Comando), M13-40, M15-42, and Semovente 75/18 and 75/34. The photos include vehicles in both Italian and German service. Throw in a couple of cool looking color illustrations for the covers and you're all set. They still slip in those great line drawings, too and these are getting better and better every issue. The selection of photos comes right from the Italian archives and gives the enthusiast all he needs to model an Italian medium tank.

## Nut & Bolts

Vol. 14

"Nashorn" 8,8 cm PaK 43/1 (L/71)

Auf Fgst. Pz.Kpfw. III/IV (Sf)

(Sd.Kfz. 164)

by Tony Greenland & Detlev Terlsiten

Soft Cover

108 pages, B&W with color plates

\$34.00

SORRY, THERE'S NO ROOM FOR A REVIEW OF THIS BOOK, AS the title as taken up too much space. Well, OK maybe a short one. This here Nuts & Bolts is a heapin' helpin' this time around, weighing in at a hefty 108 pages. Like the last few issues, this one is greatly enhanced with high quality color illustrations in addition to the vast array of wartime and museum photos. Also present is a comprehensive

section on the composition and markings of the various Panzerjäger units that used the Nashorn.

The Nuts & Bolts crew continues their habit of topping themselves each time they publish. We can't image a better single reference on the Nashorn out there today. A bargain at twice the price!

## Israeli Sherman

Tracing the history of the Sherman tank in Israeli service

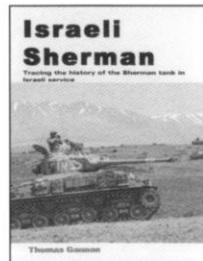
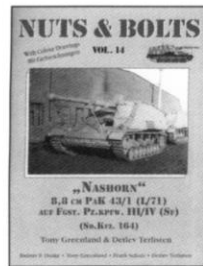
by Thomas Gannon

Hard Cover

237 pages, B&W throughout

\$39.95

THIS IS ANOTHER ONE OF THOSE "so how come no one ever..." books. The title encompasses not only the early tanks, but also the developments that led to the M50/M51 series. It also covers the various self-propelled guns, ambulances, pillboxes and numerous "specialty" vehicles that were built on the aging Sherman chassis. The story concludes with a chapter covering the Israeli Shermans now serving in Chile. Talk about legs! A great little package for the Sherman lover everywhere.



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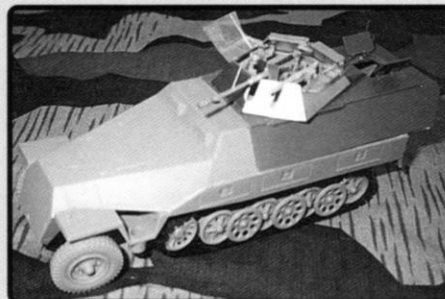
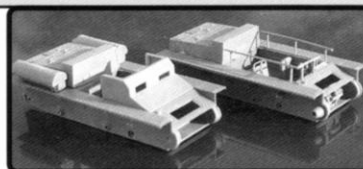
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# THE FATHER OF THE TIGER I

by Thomas L. Jentz and Hilary Louis Doyle

## The VK 36.01 is finally assembled

Until recently, the only information on the appearance of the VK 36.01 came from pictures taken of Albert Speer driving the chassis on a very muddy test ground. Due to the angles of the views and the mud, little could be gleaned from these photographs. Then, our colleague Walter J. Spielberger found clear photographs of the VK 36.01 chassis without a turret sitting on the promenade at Friedrichshafen overlooking Lake Konstanz.

We wondered why the VK 36.01, assembled by Henschel in Kassel, was subsequently sent down to Friedrichshafen. Looking for detailed data on Maybach engines, we visited Friedrichshafen and were shown a film of several different Panzers being tested on their proving ground. It was quite a surprise to see the rear end of a VK 36.01 rolling back out of a shed where the engine was being replaced. Now we had the missing rear view of the chassis.

Close examination of the photographs and original documents revealed that many of the component parts on the VK 36.01 were shared with the Tiger I. This includes the drive sprocket hub, road wheels and idler. However, the faster VK 36.01 had larger drive sprockets with 21 teeth instead of the 20-tooth sprocket used on a Tiger I and the road wheel spacing was different. (Sorry, these features were missed on earlier attempts to draw side views.) Also, as on the first Tigers produced; the road wheel rims only have six retaining bolts.

At the Militaerarchiv we found detailed drawings of key components, including the roof and the armored air intakes. We now had enough information to draw the chassis.

While Henschel was responsible for the detailed design of the chassis, Krupp designed the turret for the VK 36.01. A thorough search through the original records revealed that six turrets had been ordered from Krupp for the VK 36.01. When the project was canceled, Krupp was ordered to convert these six turrets for emplacement in fixed fortifications. But, due to the Allied bombing raids that reduced Essen to rubble, this project was not completed.

When Allied investigators visited Krupp in Essen to



1

examine the Maus hull and turret, they inadvertently photographed five of the VK 36.01 turrets in the same workshop where they had been abandoned. Fortunately, we found original prints of these photographs at The Tank Museum in Bovington. Unlike copies and printed examples, the originals are clear enough to show details of the hatches on the turret roof, the commander's

cupola, and orientation of the periscopes,



2





*Two VK 36.01 turrets found off to the side with Maus gun mantlets by Allied investigators visiting Krupp in Essen after the War. (The Tank Museum)*

*1. Replacing the engine in the VK 36.01 at the Maybach proving ground near Friedrichshafen. (Maybach-Motorenbau) 2. Albert Speer test driving the only VK 36.01 chassis assembled by Henschel. (Walter J. Spielberger) Below: The VK 36.01 is seen here near Friedrichshafen with Lake Constance in the background. (WJS)*

vision ports and pistol ports. Coupled with the technical data that we had collected, this allowed us to complete an accurate drawing of the turret.

To have gotten so far with such a rare vehicle was amazing, but the last piece of the puzzle was still missing and unlikely to be found. The VK 36.01 was to have the taper-bored Waffe 0725, but other than reports in documents, nothing was known about the appearance of this weapon.

Imagine the excitement when, while digging through thousands of artillery drawings at the Militaerarchiv, we found a detailed Krupp drawing of the elusive Waffe 0725. Without this drawing, one could not have envisaged that, due to the very high internal pressure needed to achieve higher velocities, the gun tube walls were much thicker than the walls of an ordinary conical bore gun.

Finally, after more than 30 years of digging through the original documents and photographs, we had sufficient data to recreate scale drawings of the VK 36.01. Not completed in time for inclusion in *Germany's Tiger Tanks - D.W. to Tiger I*, the four-view 1/35 scale drawings of the Panzerkampfwagen VI Ausf. B (VK 36.01) with turret and rear view photographs have been printed in the recently released *Panzer Tracts No. 6*.

These publications can be ordered directly from Panzer Tracts at PO Box 334, Boyds, Maryland 20341, email [panzertracts@aol.com](mailto:panzertracts@aol.com). A partial side view of the VK 36.01 is displayed on the Panzer Tracts website at <http://panzertracts1.tripod.com/index.htm>. Rumors have it that one of the best resin kit manufacturers will have a 1/35 scale VK 36.01 turret available this fall. ☺





# Building Big Fred

## SNAR-10 ARTILLERY LOCATION RADAR VEHICLE 'BIG FRED'



nce upon a time, around the mid 70's, I was in a meeting between some

U.S. army and British army types. We had been wrestling with sorting out all the new variants of Soviet Artillery Command and Reconnaissance Vehicles (ACRV's) on the MTLB chassis for a couple of days. This was not an easy task, since we really did not even know what the vehicles were for. The last day of the meeting someone ran in with photos of two new variants with what appeared to be radar mounted on them. Actually, only one was on the MTLB, the other one was on a BMP. One of the British types said partly in jest and partly out of frustration, "Well what are we going to call these: Fred?" We all laughed and forgot about it, except the person taking the notes. When the minutes were published, the names "Big Fred" for the MTLB version and "Little Fred" for the BMP version were in them. The nicknames stuck and later became the official NATO designators for these two vehicles. And that children, is how Big Fred got his name.

Big Fred is actually the SNAR-10 (stankiya nazemnoy artilleriysko razvedki-10 or artillery radar ground station 10) and is a self-propelled battlefield surveillance radar. In addition to a general surveillance mode, it also had a limited artillery location function, plus it can detect low flying helicopters. It was first introduced into service in 1975. According to Soviet armor guru Steve Zaloga, the SNAR-10 did have a very limited capability of finding enemy artillery, but it was better at providing target data on both moving and stationary targets on the battlefield. Although the SNAR-10 entered service with several of the former Warsaw Pact countries in the early 80's, it is probably being pulled from active service and replaced with the Zoopark-1 artillery counter-

battery system. The SNAR-10 had a crew of four and was mounted on the MTLB tracked vehicle. Because of the weight of the turret, the vehicle lost its amphibious capability. The only weapon on the SNAR-10, besides those nasty sterilizing radar beams, was the 7.62mm PKT machinegun in the small turret on the right front of the vehicle.

### The ARMO and Panzer Shop kits

ARMO is an interesting company from Poland, which has and is producing some very interesting subjects. Their kits are improving, as you would expect from any company with successive releases. They have released or are planning to release some subjects that have been on my wish list for some time. These include the SCUD A, ZSU-57/2 and ASU-85, among others. Unfortunately, the MTLB is one of their earlier efforts and it is a fairly difficult kit to build. When I bought it, I heard rumors that SKIF also might be releasing a kit of the MTLB, but as with so many rumors there was no way to know if it actually would happen. The ARMO kit of the MTLB is a full resin kit with a photo-etch sheet with it. The chassis is hollow and is in two pieces. There is also a bag of smaller resin parts, including track (sorry, but I did not bother to count, but trust me, there were a lot of them). Most of the castings were pretty good, but there were a few holes here and there and the tracks were not great. The tracks are length and link type. The instructions are a single two-sided sheet that



shows

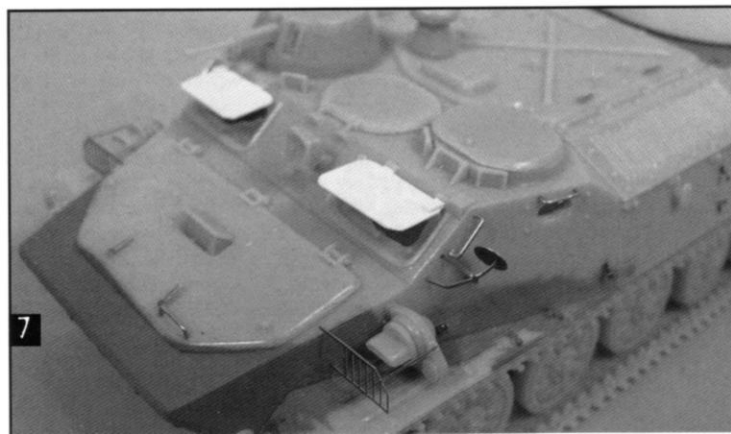
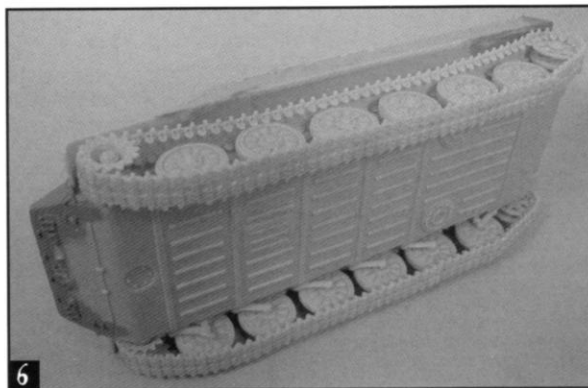
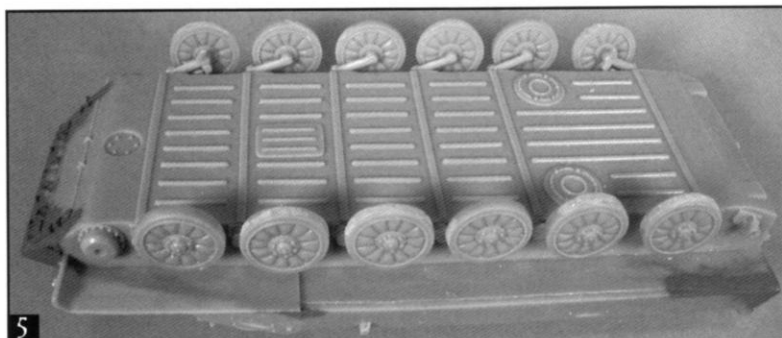
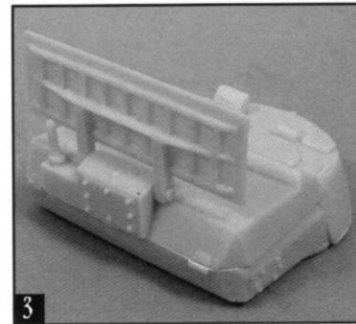
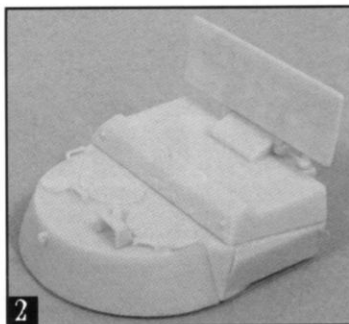
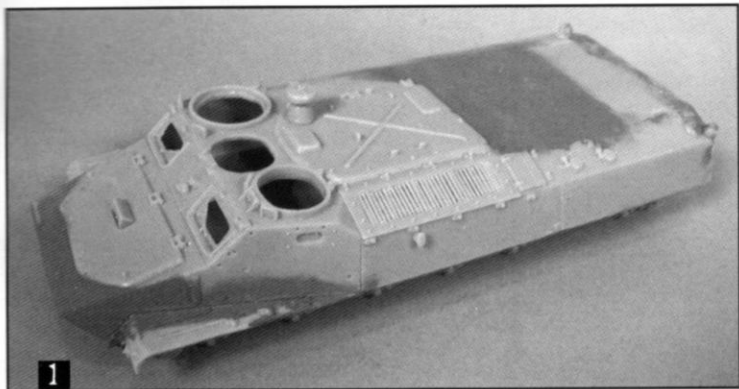
an exploded view of the MTLB and how to assemble it. They are pretty complete, but as with most resin kits better instructions would have been helpful. The resin parts are not numbered but the photo-etch parts are. There is also a very good, but thin, brass photo-etch set that comes with the kit. There were no decals, but for Big Fred you really did not need any.

The PanzerShop conversion kit is for either the ARMO or the SKIF MTLB kits. It consists of 18 resin parts (I can count, if there aren't too many pieces) and a decal sheet with Czech Republic markings. The instructions are a series of photographs showing the areas to be modified to accept the conversion and several shots of the completed components. These instructions are very complete and easy to follow. They include a number of photos of the parts installed and even a photograph showing the areas to be removed from the MTLB to allow the radar turret to be mounted. There is also one photo of the real thing.

### Building the MTLB

I started by removing the two plugs, which are on the front of the top and bottom hull pieces. I had to do some cutting and filing to get them off. Then more work to get a decent fit between the two halves. Before gluing the hull together, I removed the various parts on the rear of the MTLB chassis that are clearly shown in the PanzerShop instructions. There are a few small things like the hooks and stuff located on the top of the rear that are not identified, but obviously, they also have to be removed. The hardest part by far was removing the





two hatches that are just to the rear of the engine compartment. After grinding them off with my Dremel tool, I filled them with Testor's contour putty and sanded the area flat. By the way, I don't recommend the contour putty. I was on the road and forgot my trusty Squadron Green putty.

I then glued the top and bottom hull sections together. There was a little warping, but not too bad. Once dry, I had some small seams to fill in the front and rear. I painted the seams with primer to highlight holes that needed to be filled and sanded.

I now started on the suspension. I first cleaned up the road wheels and axles. The axles are very thin and are hard to remove from the resin blocks without damaging them. I decided to first glue the axles to the road wheels and then attached them to the chassis, watching out for alignment because there is a lot of play in their fit. I thought this approach might be easier than attaching the axles to the chassis first, because they are so small and I knew alignment was going to be difficult. This was the same problem I had with their BTR-50. This method did seem to work well, although I did end up using my hair dryer several times to get all the road wheels to line up.

I next began working on the track. I bought a set of Friulmodellismo tracks, intending to use them on this model. When I finished putting them together (several long evenings), I changed my mind about using them. I decided not to waste them on this kit, opting to use them on my SKIF MTLB or 2S1 instead. The track is length and link with plenty extra of both. They are very easy to separate from their pour blocks and clean up is simple. They just aren't very well detailed. For each side, I glued two sections of length together for the top and two for the bottom run. I cheated on the rear idler where you are supposed to use the separate links. Instead, I heated up one length and wrapped it around the rear idler, which worked fine and a lot easier. I used the separate links for the front driver sprockets but these required a lot of work to get on. The problem is that the teeth in the drive sprocket don't match the links. This is really an annoying problem. You would think that if someone made a resin kit, they would make sure the track and sprocket teeth match. Anyway, I ended up filing out between the teeth on the sprockets and doing some cutting on the links, so they would sort of fit. After the links were glued on, I glued the two long pre assembled sections to the top and bottom of the drive sprocket. The idler was glued on the other end of the top run. Then, both the drive sprocket and idler were glued

on to the chassis. This only left the bottom track run to heat up and add to the missing track section.

There is a mud remover, photo-etch part 7, that is incorrectly shown on the instructions. It has been mounted on the front and rear of one side. Actually, they both go on the rear and are inserted into the idlers. The ARMO kit has track guards for the front. I did not use these, since all the reference photos I have of Big Fred don't show them mounted. This is really good because when I took a closer look at them, they would have been difficult to get on. Mine were broken in a number of places.

The rear doors are added next. Be very careful removing them from their resin blocks. I first cut them off with plastic cutters, but ended up gluing them back on the block and sawing them off again. Otherwise, you end up breaking off part of the door. It took some enlarging of the rear door openings before I could get the doors to sit flat. I also removed the two firing ports on the rear doors.

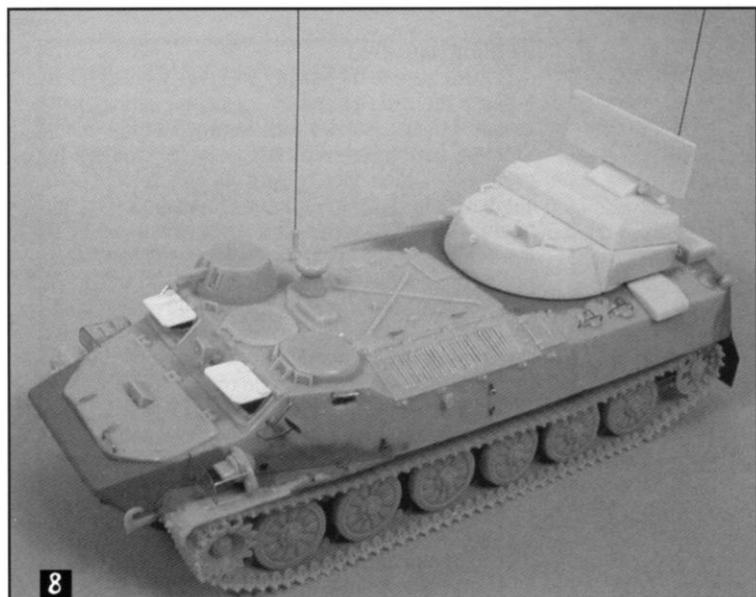
#### Adding the SNAR-10

I then moved to the Panzer Shop kit. The main pieces are ready to go. I had to clean up one small seam line, but otherwise, there is nothing to do but glue the pieces together. There are a couple of small pieces that are cast in a wafer but they came out with minimal work. I glued all the pieces together, leaving the turret/radar off the chassis till later. The whole thing took me half an hour. I wished the ARMO kit went together that easily.

#### Back to the MTLB

I then started detailing the rest of the chassis. I started on the rear where there are a couple of photo-etch mud flaps and some small handles for the rear doors. I





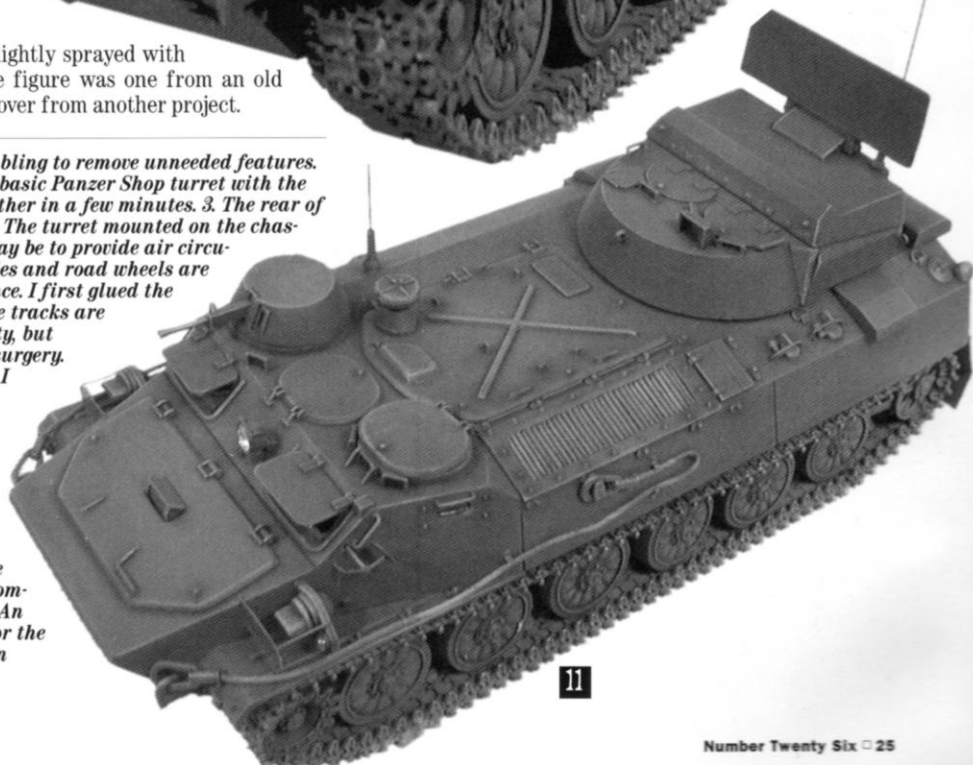
hollowed out the rear taillights for MV lenses to be mounted later. I then moved around and attached the thin photo-etch guards, parts 8. I glued the two headlight fixtures on after removing the small marker lights. These marker lights were later replaced with orange lights, after painting was complete (described below). I added the photo-etch headlight guards, which are very thin but look great. My kit was missing one of the windshield flaps, but it was easy to make new ones out of scrap sheet styrene.

I drilled out the searchlight and mounted it, using thin solder wire for the electrical connection. I also drilled out the 7.62mm machinegun barrel and glued in on to the turret. The kit provides the tow hooks, but no cables. I used some Hudson & Allen cable with these hooks and put them on after painting. I used brass wire, also not provided in the kit, for the various handles on the vehicle. I then attached all the remaining photo-etch mounts and guards. I added both antenna mounts and put piano wire in them.

#### Base and figure

I wanted to try the Verlinden approach I had recently read about in their books on dioramas. I used some sheet WoodLand Scenics Styrofoam that I cut with a hot knife. I then mixed tile grout with black/red brown and sand acrylic paints and put on the base. I added kitty litter and static grass and let the whole thing dry. I then lightly sprayed with Polly Scale Dirt and dry brushed with assorted oils. The figure was one from an old Verlinden set of Soviet Tanker/APC figures that I had left over from another project.

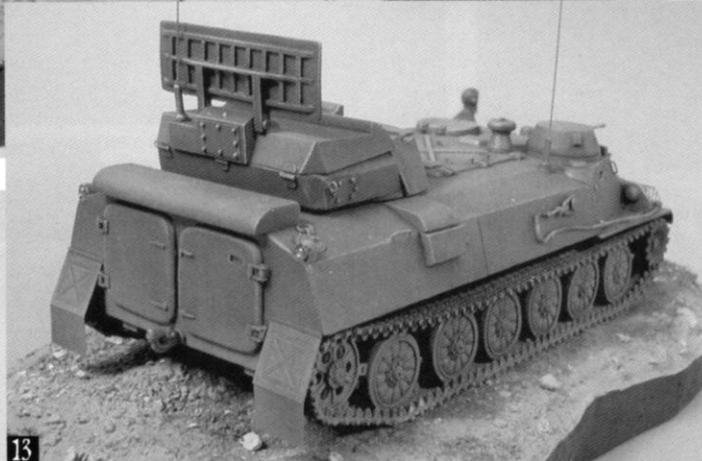
1. The basic chassis required some major work before assembling to remove unneeded features. The hardest part was removing the rear top hatches. 2. The basic Panzer Shop turret with the radar mounted. The cleanup was minimal and it went together in a few minutes. 3. The rear of the SNAR-10 radar shows the additional antenna mount. 4. The turret mounted on the chassis. I am not sure what the ducts are for, but I think they may be to provide air circulation. The antennas were made from piano wire. 5. The axles and road wheels are very difficult to attach and alignment takes a lot of patience. I first glued the road wheels to the axles, then the axles to the chassis. 6. The tracks are length and link type. They cleaned up without any difficulty, but attaching to the front drive sprocket required some minor surgery. 7. One of the windshield covers was missing from my kit, so I made two from sheet styrene. The photo-etch headlight guards are a little thin, but actually went on without any difficulty. 8. Brass wire was used to make the various handles on the chassis. The rear view mirror was a little difficult to get on and the guards for the two rear caps were a little thin. 9. The rear view shows the photo-etch mud flaps. The two piece duct on the right side still needs to be filled. It should look like one piece when complete. Unfortunately, I did not know this till after I completed the model and found that one reference shot I needed. 10. The completed model with the Hudson and Allen tow cables added. An MV lens was used in the searchlight and thin solder wire for the power cord. 11. The orange marker lights were made from an emergency light set from ROCO.







12

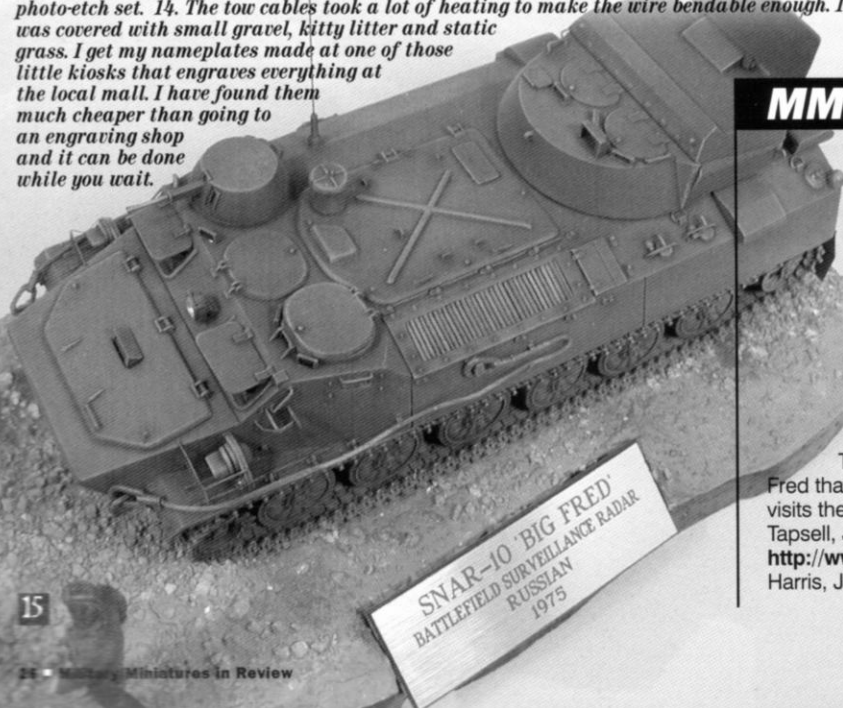


13



14

12. The figure is from an old Verlinden Soviet Tank and APC figure set. The base is made from WoodLand Scenics Layout Styrofoam covered with title grout. 13. The model was finished in Tamiya paints and dry brushing, the red MV lenses were added after painting. The mudflaps are from the photo-etch set. 14. The tow cables took a lot of heating to make the wire bendable enough. 15. The base was covered with small gravel, Kitty litter and static grass. I get my nameplates made at one of those little kiosks that engraves everything at the local mall. I have found them much cheaper than going to an engraving shop and it can be done while you wait.



15


## Painting big Fred

I made sure to thoroughly wash the whole vehicle because the resin producers used some serious mold release. I then sprayed it with Tamiya XF-1 Flat Black. This was both a base coat and a chance to check for problems. I then lightly sprayed the vehicle with Tamiya XF-61 Dark Green. Lastly, I sprayed a very thin mixture of 50/50 Tamiya XF-61 Dark Green and XF-60 Dark Yellow on the upper panels for a weathered look. I know these vehicles didn't see a lot of field activity, so I did not weather it a lot. I gave the whole vehicle a light coat of Polly Scale 50/50 clear gloss and flat to give it a slight sheen before weathering started. I painted the tracks with Polly Scale rust and road wheel tires with

Polly Scale black. Once everything was dry, I gave the whole vehicle a wash of black oil paint. I then spot washed all the important areas with black/burnt umber oil paint. The last step was to dry brush with titanium white/sap green and burnt umber oil paint.

I then added MV lenses to the searchlight and two rear taillights, plus orange markers on the front. The orange markers are from a ROCO emergency light set which I have found very useful. Although for HO scale, they work great on the bigger stuff also. I then used Micro Kristal-Kleer in the ports on the side and rear of the chassis for glass.

## What do I think now?

The ARMO kit is not bad for a resin kit. I have the SKIF MTLB, but as I have not built it yet, I can't compare them. The biggest problem with the ARMO is the suspension. The axles for the road wheels are very weak and difficult to get on straight. The mounting points are almost non-existent. Additionally, the rear doors were especially difficult to separate from their pour blocks. The tracks are not great, but better than the rubber band ones on the SKIF kit. The rest of the kit is not too bad. As I mentioned, I had bought this kit before hearing about the SKIF kit and was not sure what to do with it until I saw the Panzer Shop conversion. The Panzer Shop kit, while rather simple, is quite complete for a conversion kit. All the main parts are cleanly cast without any clean up required. For the price, I don't think you can beat these products, especially when compared to some of the pricey kits offered by other companies. The conversion kit will work well with either the SKIF or ARMO kits, but since I had already bought both, I feel I made the right decision in choosing the ARMO kit. 

—Jim Hensley

## MMiR RECCE

ARMO MTLB. Kit number 35009. Suggested retail price \$43.10  
PanzerShop SNAR 10 conversion. Kit number P3527.

Suggested retail price \$25.00

Both kits available from Panzer Shop

<http://www.panzer-shop.iol.cz/shop.htm>

MV lenses: Clear #L173, Red #LS410, ROCO: Emergency Lights #464 HO.

### Reference

*Soviet/Russian Armor and Artillery Design Practices: 1945 to Present*, Zaloga, Steven J., Hull, Andrew W., Markov, David R. Darlington Productions, Darlington, Maryland 1999. A line drawing and good descriptive text but no photos.

The following two sites have a number of great photos of a Big Fred that was captured in Iraq and I believe is either now at Duxford, or visits there for shows. Otherwise, there is just not much out there.

Tapsell, John. Armored Engineer website,

<http://www.armouredengineer.force9.co.uk/index.htm>

Harris, John. UK Military Modelling, <http://www.ukmilmod.force9.co.uk>





## The comfy Bedford QLR Mk III command truck from Resicast

**T**he Bedford QLR Mk III was manufactured from July 1943 until sometime after the war. Spurlings, Mann Egerton and Mulliners built the bodies. The house type bodies differed subtly in outward appearance and the furniture, partitioning and signal equipment on the inside varied as well. It was difficult to identify each variant but there were three main body types that varied in length and height of the house body and in the type of penthouse tent. There were many postwar rebuilds and many vehicles served on into the Seventies.

These vehicles were used in the following roles: Command H.P. and L.P., Cipher Office, Mob. Terminal Carriers, Wireless I, R, and H.P. The kit provided by Resicast is the Lorry 3 Ton, 4X4, Wireless H.P. (High Power) - Ground Station. The vehicle was divided into a staff compartment and an operating section for three operators.

The exterior of the truck included a sliding glass window in the roof, a luggage grid, two folding tables, a locker housing the tent, exhaust silencer for auxiliary engine, extractor fans, stowage for engine ramps and aerial masts. Other stowage lockers on the chassis carried batteries, chains, tools and a host of other equipment. Wire reels and POW carriers were stored below the body on the chassis. The spare wheel was carried behind the cab and had its own ramp arrangement to assist with loading and unloading the heavy wheel. Above the spare wheel was more locker and stowage space.

The exhaust system from the vehicle was routed through the auxiliary engine compartment and both engine exhausts were silenced and exited through the roof. Additional equipment included a power take off (PTO) unit from the rear of the transfer gearbox to the special 660 Watt auxiliary dynamo. Sophisticated radio suppression equipment was installed on the ignition distributor and

spark plugs to reduce interference (RFI) of radio transmission and reception signals. Three crew doors were provided, one at the rear and two toward the front on the body. Windows could be lowered for ventilation and roller sun blinds were installed over every door and window. An angled tent could be erected off the back and port side of the vehicle for additional working space. Reference photographs show different types of aerials and other fittings, so the form of the vehicle varied with its function.

The Resicast kit (35-138) comes in a stout box with all the resin parts in small plastic bags and separated by bubble wrap. There are more than 285 resin and etched parts, plus clear plastic sheet, in addition to styrene rods and strips. Many of the bag's contents matched various steps of construction, so it was not necessary to hunt for specific parts. Parts were numbered or lettered on their plugs and separation was simple, using either a saw, side cutters, knife or scribing as needed. Care should be taken to avoid inhalation of resin dust when using a saw or sanding. Cyanoacrylate glue and Elmer's white glue were used throughout construction. The molding was exquisite and full of detail, matching Resicast's usual high standards.

Resicast provided some of the most comprehensive instructions that I have ever seen for a resin kit. There are 14 pages, which were broken down into a list of resin, plastic and photo etched parts. Two pages are on assembly instructions and tips and one page is of what appears to be technical drawings giving dimensions of a Bedford QL. Another page provides drawings from the Bedford QL driver's manual. Also included are sketches of chassis attachments, photocopies of photographs of the resin kit in various stages of construction, and finally, seven pages of close-up photos of an actual vehicle belonging to a collector. The photos were captioned and were referred to in the assembly instructions, so it

was simple to reference the various parts during construction. It is a good idea to read through everything carefully before beginning construction and thus avoid any confusion. A few parts were mixed up on the instructions but the photos and figures allow everything to be readily sorted correctly. This probably occurred because parts from Resicast's three Bedford kits were interchangeable. A graphite pencil was used to write letters on many of the resin parts and this assisted with identification after the carrier plugs were cut off.

There were seven steps listed in the assembly instructions and each step provided the appropriate reference photo or figure from the main instruction sheets. Some parts require painting before assembly, so planning is essential. Resicast provided a fully detailed interior and as a result, many parts were individually assembled and painted, then attached in the appropriate position. The interior detail was impressive and included radios, Lee-Enfield rifles with canvas bolt covers, seats with manuals and cipher books stored below them, seats with buttons and wing nuts, blackboard, bell, heating pipes, radio control boxes, auxiliary engine, lights and air ducts.

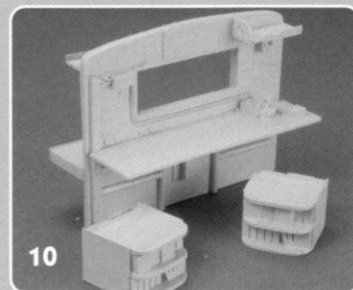
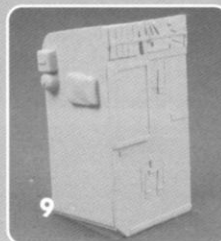
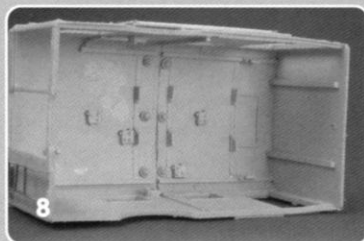
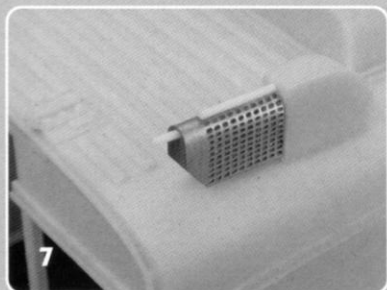
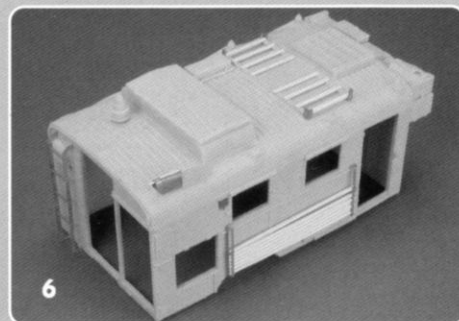
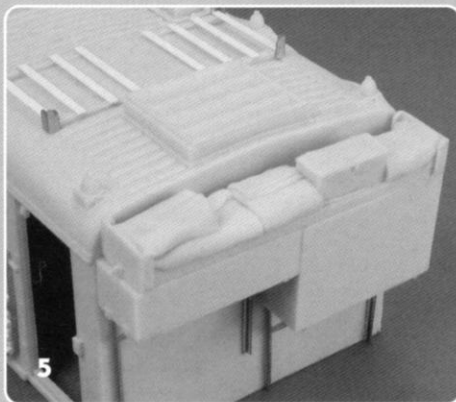
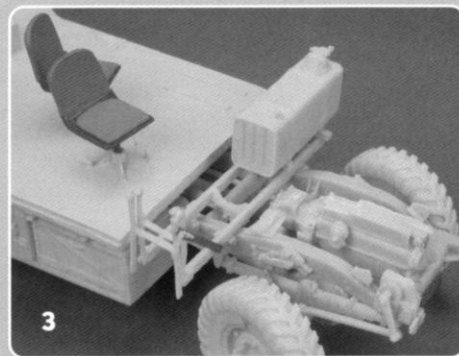
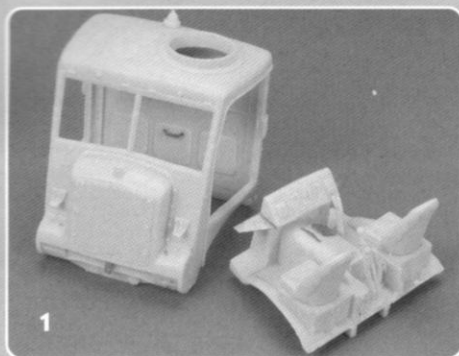
### Chassis assembly

A beautiful, well-detailed engine was provided by Resicast and can be displayed on the chassis. However, due to casting constraints and the thickness of some parts, if the cab is to be fixed to the chassis, the engine has to be cut down. Other variants of the Bedford from Resicast come with a partial engine, so no cutting is required.

Two lengths of brass rod were molded into the chassis frame to strengthen it, so there is no problem of the resin yielding. The same was also done for the two axles, as they bear the weight of a lot of detailed resin castings.

The chassis was constructed according to the





instructions and styrene rod was used for shock absorbers. The drive shafts were carefully assembled remembering that they pass over the cross member. The front wheels were turned at an angle and secured; a little drilling and filling was required at this point to get a good fit. The steering levers were positioned and the steering knuckle secured to the top of the plate on the right brake drum. The knurled discs were glued to the well-detailed hubs of the front wheels. On close examination, the hub splines can be seen. These knurled discs assisted the driver and assistant with entering and exiting the cab and functioned mainly for holding slings to load the vehicle aboard ships. A small part of the steering worm assembly was removed to get the cab to sit properly on the chassis. Because Resicast even provides the attachment plates for the chassis and cab as separate pieces, consultation of the diagrams and photos was really necessary at this phase of construction. Two oil filters, oil sump guard, exhaust system, brake servo unit and many other chassis parts were provided and were secured in position after test fitting.

### Cab assembly

The brake and clutch posts and pedals were secured to the floor. The lever for the PTO dynamo arrangement was provided and differs from the usual lever arrangement of the QL vehicles. The gear and handbrake were attached in their appropriate positions. The take over box or control unit, along with an electric bell, was located on the rear

wall of the cab. These were fixed in position and the antenna base added to the cab roof and the variometer placed directly below it, inside the cab. To facilitate photography and painting, the cab floor was kept separate until most of the details were added. The cab and floor need to be test fitted as parts are added, to ensure that there are no obstructions. The brush guard or bar was fashioned from plastic rod and holes to accommodate it were drilled in the outer shell of the cab. Care should be taken at this point to use the plans provided to get the holes in the correct spot and adjust the brush bar to the right height and angle. Later Bedford models by Resicast come with a resin brush bar and cast holes for positioning. The turn indicator and lights were added next. The windscreen and glazing for the doors were left off until the end of construction and after final painting. Some doors displayed partly open windows, others carried full windows. White glue was used to secure the windows. Detail on the doors included the window cranks, rivets and entry handles. Grab handles were fashioned from styrene and added to the rear of the roof hip ring and to the exterior wall of the cab. These assisted the driver with entering the cab. Small details, like mirrors, wipers and so on, were added after painting, as they are delicate and easily broken off and lost. The fenders were added after the floor of the cab was glued to the shell. The fenders required a little adjustment for the ends to fit correctly and this was done by removing some of the resin with a sharp knife. Two Lee-Enfield Mk 4

rifles were procured from the parts box and added to the cab near the crew's seats. Once everything was ready, white glue was used as a filler for the small seams on the underside of the cab. One headlight was used and the interior was painted silver and white glue used for the lens. The photo etched starter crank bracket (P2) was lost due to the inevitable "tweezer launch," so a new one was made from the edges of the photo etched fret.

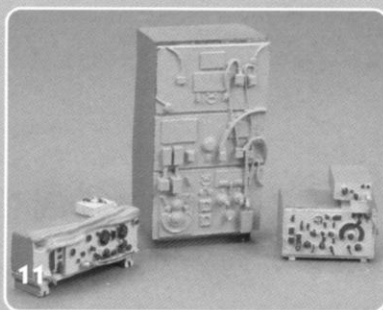
### Spare wheel and petrol tank assembly

On the real vehicle, the spare wheel was very heavy and an arrangement was constructed to provide a folding ramp for rolling the spare on or off the vehicle. The ramp was then folded back into place and secured. The kit's assembly was made of resin and photo etched parts and was well detailed and very delicate. The reference drawing (Fig. H), was very good and was self explanatory once all the small parts were cleaned up and test fitted before final gluing. The spare wheel clamp was positioned and all the required wing nuts were fixed into their notches. The petrol tank was then placed in position and secured.

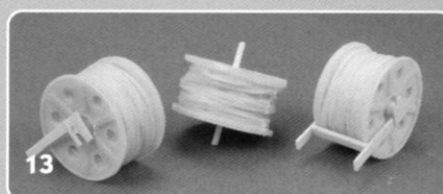
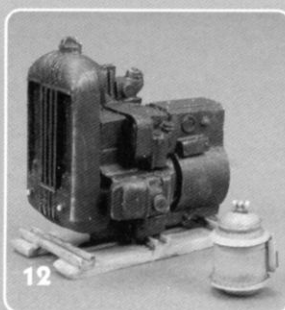
### Radio body interior assembly

On several occasions the idea of separating the roof of the body from the sides to display the well-detailed interior was entertained, but a saner mind prevailed. A slip of the saw would ruin an expensive kit and also the separated edges might not be easy to conceal. Cutting at an angle with a fine saw was



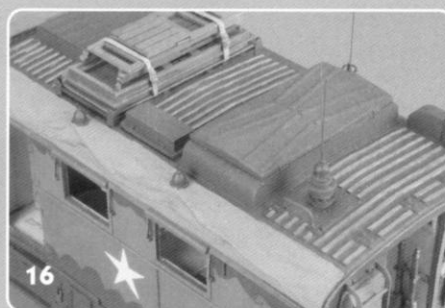


1. Cab with radio antenna base. Driver's compartment was well detailed with foot pedals, gear and brake levers, seats with buttons and photoetched shelves. 2. Floor of housebody on chassis. Well detailed seats with floor wingnuts, stowage lockers, wire reels, jerry cans and petrol tank can be seen. 3. Steering arrangement, cut

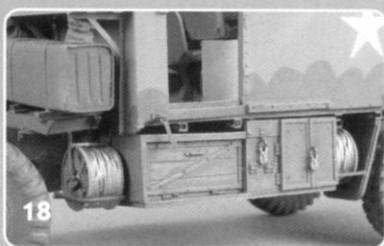
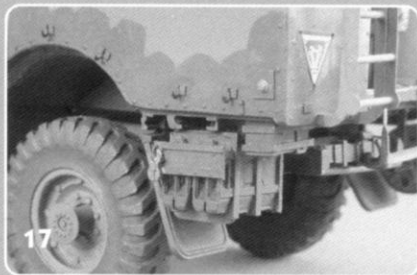


down engine, petrol tank and spare wheel ramp. 4. Top view, showing front stowage locker and folded canvas. Luggage rack for tables and chairs, well detailed roof, with covered sky lights, strakes and exhaust shield. 5. Close-up of front showing

stowage locker and its metal supports. Photoetched and styrene luggage rack for tables and chairs. Stowed canvas and well detailed roof. 6. Top view showing access ladder, exhaust silencer, and poles for radio mast. 7. Engine and auxiliary engine exhaust systems were routed through the rear compartment and out through the vehicles roof. 8. Underside of body showing: lights, air vents, and control boxes. The two long posts at the front were for full length maps. 9. Partition for auxiliary engine at rear of radio operator's section. Electric bell, blackboard and signals books and pamphlets can be seen. 10. partition between radio operator's and officer's sections. Heating pipes can be seen below the table. Seat supports display signals library and other paraphernalia. A sliding glass window separated the two compartments radio wires and connections can be seen on the tabletop and wall. 11. Various wireless sets. Probably #19, #53 and reception set #R107, respectively. 12. Auxiliary



engine and air filter. This engine was set on skids and could slide out using the rear lowered ramp. 13. Wire reels for communication away from the vehicle. 14. Close-up of cab showing rifles, control unit and variometer in the roof. 15. Cab close-up showing control unit and variometer in roof, rifle, gas panel detector and detailed engine grill. 16. Top view showing: antennae, wooden roof strakes, scratch built folding tables and chairs, tent canvas along the inside, rifle stowage and auxiliary engine. 17. Rear 3/4 view showing hooks for erecting the tent, rear ladder, rear step and tow hook. Stowed jerry cans and brass lock. 18. View shows: holders for wire reels, stowage lockers with detailed brass locks, well detailed petrol tank cover.



the best prospect, but it was decided to chicken out that day in order to build for another day.

The radio body interior was painted in Humbrol Enamel Oak and all the added equipment, such as the seats, panels and radios, were painted in various colors before fixing to the interior. Maps were cut out from old magazines and glued to the tables and main map board toward the front of the body. Headsets and microphones were taken from the parts box and displayed on the work tables. Fuzzy lettering was added to the blackboards with a white pastel pencil. Typewriter, briefcases and signals satchels were located by scrounging around the vast parts box. The acetate sheet provided was used to form the sliding glass windows in the partition and also for all other displayed glass. The generator walls were fixed in position after painting and the generator installed. A little filing and sanding were required at this point to make sure that the body fitted the chassis. Rifles were provided and show canvas breech covers with snaps. The swivel chairs even have wing nuts added to the chair bases on the floor. Resicast included almost everything. More detail, like wiring harnesses and electrical conduits could be added, but there was a limit on time and better references showing this detail would be needed.

### Radio body exterior assembly

The stowage lockers were added to the front of the body and the photo etched supports bent with pliers and glued into position. The doors and venti-

lators were opened to display the beautiful interior. The rear ladder was made from Imm rod and photo etched brass. These parts were very thin and caused some grief when trying to keep everything straight. The rungs on the lower level of the ladder need to be slightly wider than the top portion, so care was taken to get the right adjustments. The bent portions of the ladder can be attributed to or blamed on the unskilled military driver and wear and tear of battle and not on the kit constructor. The small hooks and eyes, door latches and rear steps were left off until the model was completed.

The aerial supports and styrene rod were attached to the body and a strap was made from paper. The buckle was scrounged from the parts box. The rear antenna was glued into position and a large grab handle was added from copper wire. The table stowage supports were formed from the provided photo etched fret and styrene strip. Resicast provided the antenna for the "B" aerial in resin and also supplied replacement rings in the photo etched brass fret. The exhaust outlet and guard were constructed and placed in position. Several small styrene rods were cut to size and placed in the brackets for the sun-shade rollers. This is not mentioned in the instructions, but can be seen in the photos.

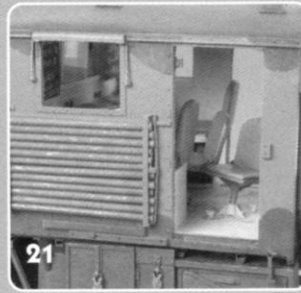
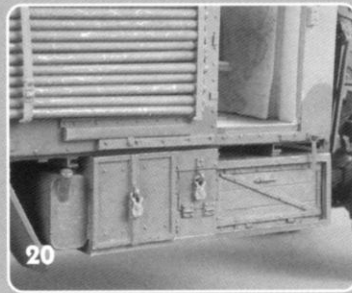
### Final assembly

Stowage lockers were glued into position below the floor. These parts require a bit of sanding and filler to keep them horizontal. They were full of

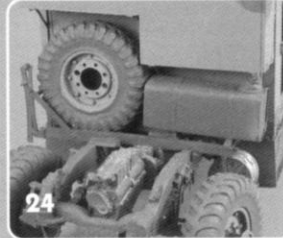
detail and showed the padlocks which were used. Mudguards and attachments were added next. Frames and support brackets for the wire reels were made from styrene strip, using the photos for reference. Jerry cans and oil container were positioned and glued. The exhaust system extension was carefully marked and bent into position. A soldering iron was used to heat the styrene rod and fix the bent portion of the exhaust into the correct shape. The rear door-step straps were twisted as required then glued into position.

Two tables and chairs were scratch built from styrene strip and added to the stowage brackets on the roof. Paper straps were made and small buckles from the parts box added. Antennae were fashioned from fine wire and attached to the appropriate aerial holders. The last items added were the doors and their associated hardware, like hooks and eyes. Some of the photo-etched eyes were used, while the ones holding the hooks were replaced with small wire rings. These were stronger and attached by drilling a small hole and gluing. The hooks were then free to swing. Two holes were drilled for each hook. The gas detection panel, mirrors and windshield wipers completed the construction. The gas warning panel was painted black and, in reality, usually carried a splash of yellow-green colored paste that changed color in the presence of poison gas. The location of the horizontal metal bracket allowed the driver to view the paste and take appropriate action if necessary.

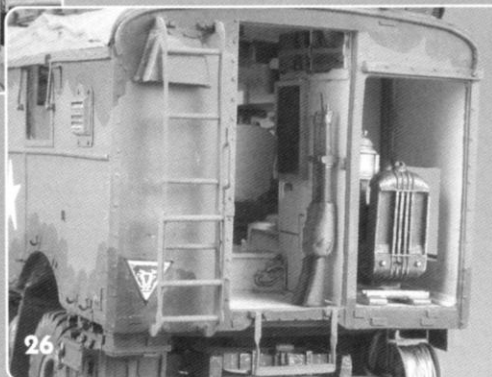
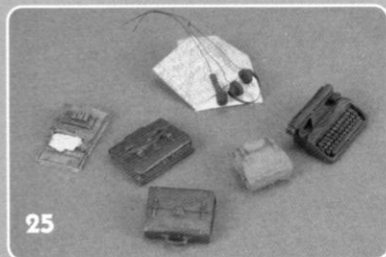




19. View through window showing maps, detailed chairs with wing nuts to secure chair to floor. Wooden roof strakes and folding tables are visible on the roof. holder for radio mast poles and strap. 20. Stowage lockers contained tools, non-skid chains, batteries and other essential equipment. View shows full length map, folded ramp for spare wheel and knurled wheel disc for loading vehicle aboard ship. 21. View into the officer's map



partment. Table with maps, four chairs and two blackboards with lettering can be seen. On the body exterior locks, door hook, stowage lockers and struts for the roller blinds above the window are visible. Holder and strap for radio mast poles. 22. Rear 3/4 view showing access ladder, rear step, #52 wireless set, auxiliary engine, wire reel, petrol tank for auxiliary engine, radio antennae mast with strap and photoetched bracket. An ordinary graphite pencil was used for applying scratches to the radio mast. 23.



Rear view showing access ladder, rear step and lowered side panel. Inside the vehicle the #53 set with variometer in the roof can be seen. The auxiliary engine is in its compartment and the exhaust pipe can be seen in the right corner. Roof shows exhaust heat shield and aerial fob "b" set. 24. View shows cut-down engine, spare wheel and petrol tank, stowage locker with canvas and box on the top shelf. Towing rings were fashioned from copper wire. note splines on wheel hubs. 25. Equipment from the spares box included signals satchels, map case, briefcases, typewriter, maps, headset, and microphone. 26. Interior shows: seats, books, blackboard, stowed rifles. Auxiliary engine compartment shows engine on skids and exhaust pipe traveling up through roof. On the exterior: stowage lockers, jerry cans, tow pintle, rear step, wire reel, access ladder with folded-up lower section.

## Painting

The painting was done as subassemblies were completed. Humbrol and Testor enamel paints were used in most cases. The interior required the most time, as the radios, furniture, tables, heaters, lights and air ducts were painted in various colors. Wood color was applied to desk tops and other partitions. Circuit boxes were also picked out with different gray colors and red paint applied for the small signal bulbs. Large areas, like the roof of the body and chassis, were sprayed black. The black "Mickey Mouse" pattern was then painted on with a brush. Humbrol Enamel green #117 was used for the basic vehicle color. Much to my horror, the old tin of #117 soon ran out and the new Humbrol Color #117 was much lighter in color. The new #116 was a better match, so this was used to complete the model. So beware when replacing the old Humbrol Enamels with the new paint range from the Humbrol Colors and Super line. In total, five tins of varying age were located with various Humbrol headers as the

company changed its product logo and lines of paint.

The wooden strakes on the roof of the cab were picked out with a fine brush and Testor wood color and then washed with burnt sienna oil paint. The roof canvas and stored tent equipment were painted with Humbrol enamels and washed with sepia oil paint to darken the fabric and add shadows.

## Markings

Rub-on allied stars came from the decal box and were applied to the cab's roof and the side of the body. Markings of the 79th Armored Division were displayed on the side front fender and rear panel. The Arm of Service flash was for Divisional Headquarters Royal Signals and the Tactical marking was the Royal Signal's white and blue flash, with S1 painted in red to show vehicle number one. After application and drying, the markings were painted over with a clear matte lacquer. One of the decals wrinkled up, probably because the lacquer coat was too thick. So the process began again. Maybe next

time acrylics would be used instead of the lacquer. A small disc was cut from styrene sheet, painted matte yellow, and then the number eight was painted by hand in black paint. This represented the bridge classification number and was applied to the offside fender below the small sidelight.

This vehicle was a delight to build and researching the kit was as much fun as the actual construction. There were many parts that required painting before assembly and test fitting before final placement with glue was paramount. A little bit of planning was required as each stage progressed, but nothing beyond the capabilities of the average modeler. Building Resicast kits offers great mental exercises, as you are required to think. It differs from the usual boring plastic assemblies and will certainly fight off Alzheimer's Disease as you put your noodles to work. I enjoyed this kit very much and hope that Resicast comes up with a few more Bedford variants to add to their excellent range.

—Carlos D'Arcy

## MMiR RECCE

**Resicast Bedford QLR Mk III, 1943.** Kit number 35-138. Kit graciously provided by the manufacturer. Suggested retail price, 3799 Belgian Francs, about \$87.00 or £58.00.

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*British Military Transport.* David E. Jane, Almark Publishing Co. Ltd., London, England, 1978. ISBN 0 85524 308 2

*Data Book of Wheeled Vehicles - Army Transport 1939-1945.* HMSO Books, UK, 1983. ISBN 0112904084.

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*Bellona - Military Vehicle Data #13.* MAP Publications Ltd., England, 1973



# Marder He Wrote

*At long last, Tamiya ventures into the land of the 38(t)*

**D**uring the German campaign in Russia, victories were tempered by encounters with more powerful Soviet armor. As new, heavier tanks were being developed, *interim solutions had to be found* to deal with the more powerful Russian AFVs. Czech LtVz.38 tanks had already been converted to the PzKpfw 38(t) (and would later be used as the platform for the Hetzer), but a quick solution in 1942 was to mount captured Soviet anti-tank guns on the 38(t). Stores of FK296 cannons were rebored to accept a PaK40 round and the 7.62cm PaK36(r) was born. The unique 7.92mm MG37 was retained between the driver and radio operator. The first prototype debuted in December 1941 and 344 units were produced from April to October 1942. The Panzerjäger 38(t) für 7.62cm PaK36(r) (Sd.Kfz. 139) was one of three converted vehicles falling under the designation Marder III and they served mainly in Russia. However, from July to November 1942, 66 of these vehicles also reached North Africa.

## The overview

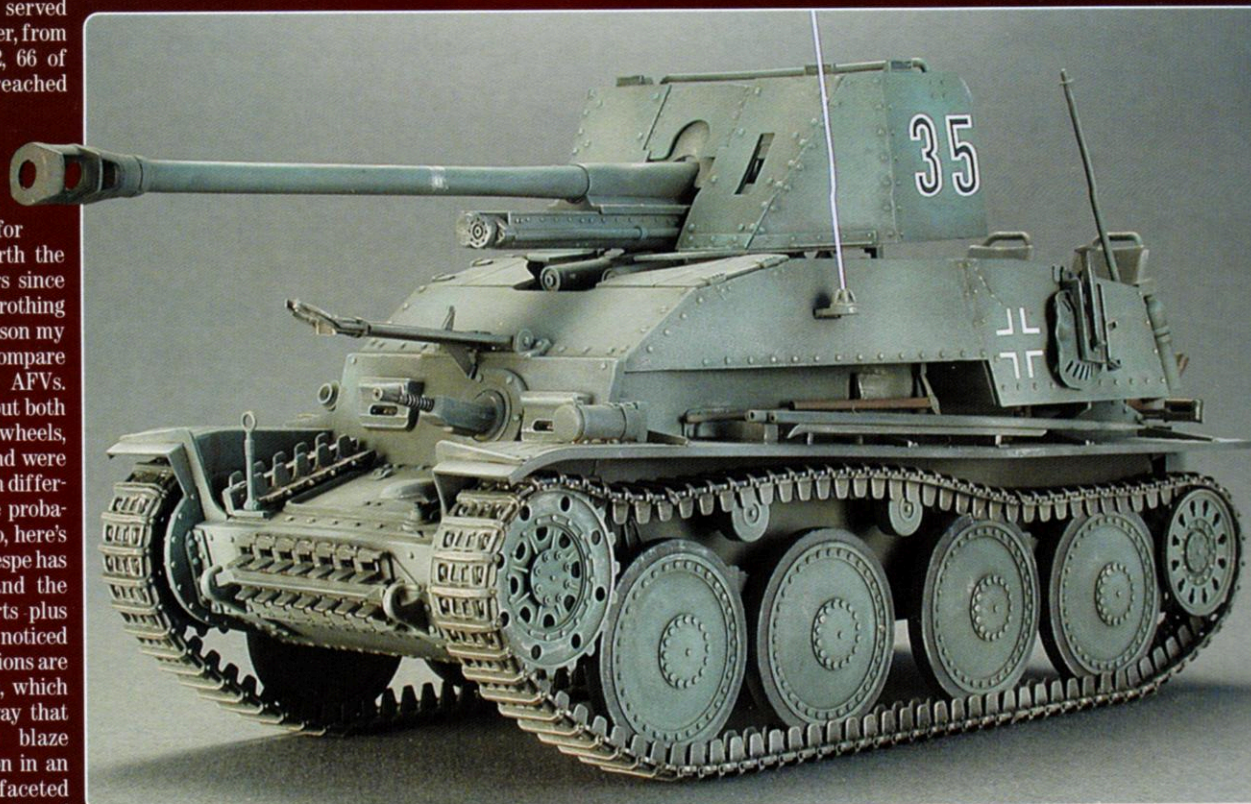
The 38(t) platform has been on modelers' Tamiya wish lists for decades and it was worth the wait. It's been five years since the Wespe sent us into a frothing frenzy and for some reason my first reaction was to compare these two diminutive AFVs. They're barely related, but both feature single layer roadwheels, open firing platforms and were built up on a vehicle with different origins. Since you've probably built a Wespe or two, here's your comparison. The Wespe has 189 parts plus crew and the Marder III has 231 parts plus crew. I also immediately noticed that the Marder instructions are in stapled booklet form, which lets you know right away that you're not going to blaze through the construction in an hour. This is a multi-faceted vehicle and dictates a bit of careful thought as to how it will be painted. It's generally not my practice to build models out of the box. I prefer to wait for kits to go through the aftermarket grinder and see what pops out on the other end. But there's always an excep-

tion, so let's build a Marder. In fact, let's build two.

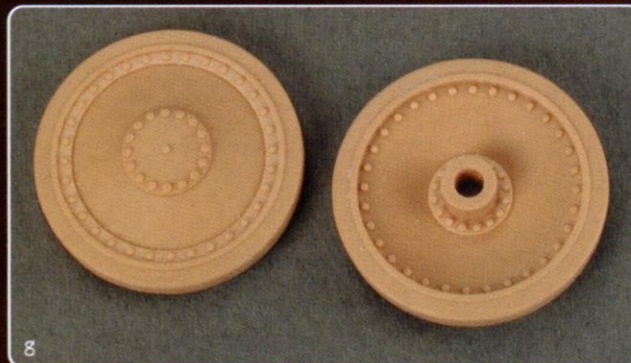
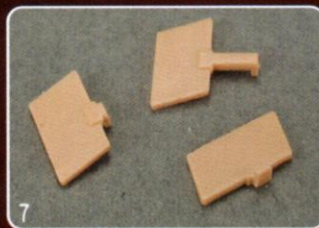
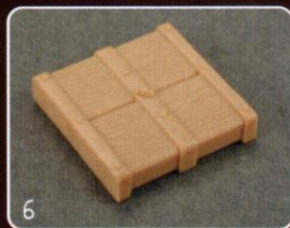
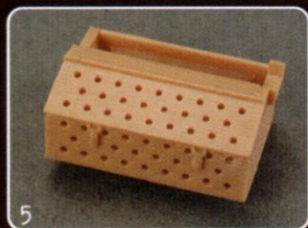
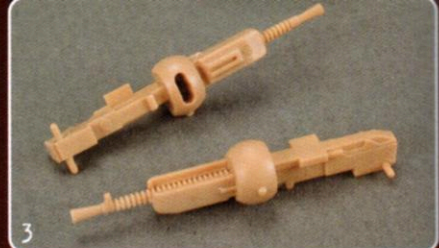
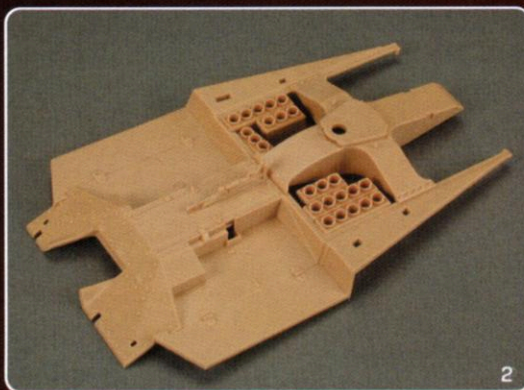
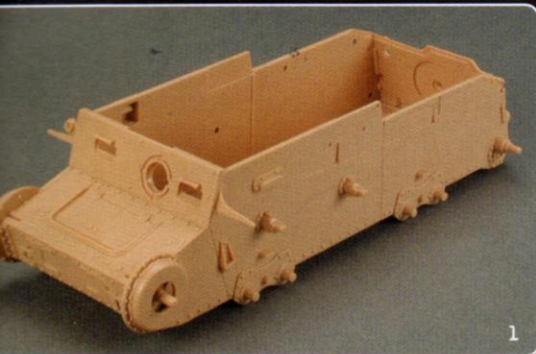
## Construction site

My first step is always to read through the instructions, identify the main components, remove and clean all easily identifiable parts and elimi-

nate parts not used. The Marder III has a few spares: an extra MG37, one long spare track and bracket for the front of the hull, two single link spare tracks, one Notek light, three large poly caps and two small poly caps. Four shells and four empty







1. The cool multi-part hull. 2. With the exception of the MG40, this is a single part. 3. The Czech 7.92mm MG37. You'll find an extra in the kit. 4. The Czech shovel. Nice touch! 5. The perforated box on the right fender is for storing track grousers. 6. Look at that jack block. This one even has the wing nut. 7. Three rhomboids are included in the Marder III for early Russian campaign configurations. 8. The road wheels detailed on both sides, of course. 9. The idlers are even detailed where you can't see them. 10. Tamiya at its finest, the drive sprock-

et. 11. Three of the suspension components, a spring assembly, a roadwheel arms and a return roller.

A17) for painting. You'll also note that there are no location marks for the short spare tracks. I glued the bracket bars to the two tracks, positioning the inner edge of each track so it rests on the lip of the forward hatch. You'll note Tamiya has included the original Czech shovel—veerrry nice. I drilled out the ends of the cleaning rods before attaching them to the left fender. Be

advised that many tools are going to be tucked away under the overhang of the fighting compartment, which again, will determine how you paint. I decided I could reach them all for painting and attached all items in these steps.

Steps 10, 11 and 12 comprise the firing platform and vertical armored plates. Racks for 24 of the 30 stored rounds are installed here. There's a handy MP40 in a bracket which fits beneath the breech travel lock; I drilled out the barrel and hollowed out the magazine chamber. Before attaching the platform to the lower hull, I masked off the fenders and gave the interior a blast of Krylon Ultra Flat Black. This is a must whether you leave the hatches open or not, as the yawning interior will be visible either way and will be difficult to paint with the firing platform installed. (I'm betting the aftermarket guys are going to have a field day with this interior. If you can't wait, check out the Alan 38(t) vehicles for interior goodies.) With the interior blacked out, the upper and lower halves were attached. Two shell racks are assembled in Step 13; these were set aside for painting.

Steps 14 and 15 cover the spent shell basket and other fixtures. The basket requires careful cleaning; this is not an easy thing to reproduce in plastic and there are numerous mold extraction points on this structure. After careful scraping and sanding I coated these areas with Tamiya Extra Thin Cement to smooth out the lines and the basket was added to the painting pile. I drilled the requisite pinhole in the flap of the rear Notek light. Tamiya provides eight shell butt plates and these can be

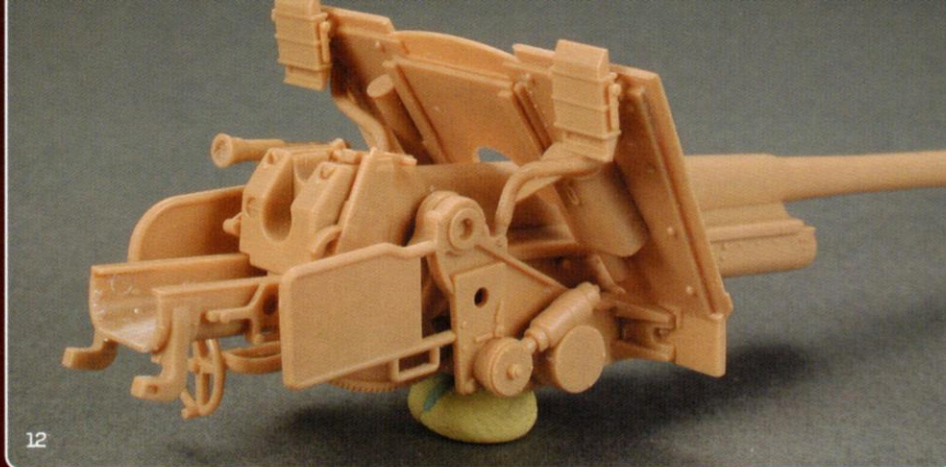


casings are also included for use at your discretion. Steps 1 and 2 are the lower hull and running gear. The hull fits together perfectly and Tamiya has provided ample slots and lips on the body walls to ensure everything squares off. Step 3 deals with the fenders and installation of the MG37. (You'll want to linger here and perhaps sigh a bit. The MG is a work of art.) I drilled out the MG barrel with a pin vise. Attach the fenders securely to the hull before fixing the forward fender brackets (C14 and C15), you'll be glad you did. Step 4 is the roadwheels, drive sprockets and idlers, which give you Tamiya at their finest. The detailing here is sublime. I set aside all wheels for the painting stage. Step 5 is the rubber tracks, which are surprisingly well done. These also went into the painting stage pile.

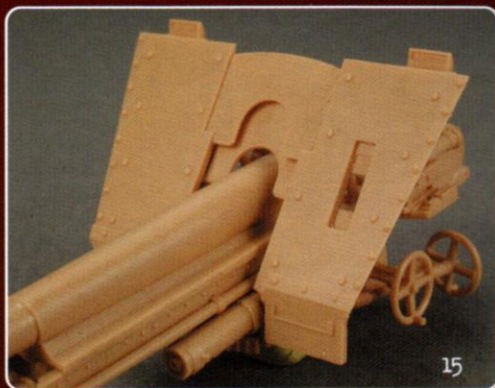
Steps 6 through 9 deal with attachment of tools and various external fixtures. I attached the main spare track to the front of the hull, but left off the two short sections and their brackets (parts A1 and

installed in the lower ammo racks as desired. Steps 16 and 17 cover several variable parts: the gun travel lock, seats, hatches and rhomboids. (Yes, rhomboids. Just the thing for a summer vacation in Russia.) To demonstrate the variations, I built the two kits differently, one in a ready-to-fire mode and one in a more leisurely posture. For combat, the two seats are disassembled, with the backs stowed on the shell basket and the lower seats folded and flipped out over the sides. Very cool and Tamiya has done wonders here. One travel lock was lowered the other prepared to grab the barrel. If the travel lock is raised, the closure has to wait





12, 13. The real meat of the model, the 7.62cm gun. 14. A close-up of the telescopic gun sight. 15. The armor plate over the gun barrel is another part which can be positioned up or down. 16. The kit includes a total of eight shells to play with. 17. The basket is well designed but requires a bit of cleanup. It was attached when the painting neared completion. 18. The major seat components, these can be set up or stored outboard. 19. A pair of action pose crewmen is also included.



until the gun is completely installed. Pay careful attention to the small schematic on travel lock construction. I closed up one pair of hatches and left the other open (separate for painting). These unique hatches could be folded as well, so I cut and folded one for the driver. Step 17 includes installation of two poles that supported the foul weather tarp. I decided to cut the poles off of one Marder and hollowed out the brackets.



Steps 18 through 24 deal with the meat of the model, the 7.62cm. Here's something interesting; by the time you reach step 18, you've burned through all the other sprues. The gun is sprue D and the only parts still lying around are two hand wheels, two periscopes and two gas mask canisters. Let's collectively cross our fingers and hope for more 38(t) models from Tamiya, shall we?

The gun goes together beautifully. I decided to assemble the entire gun and shield; you may decide otherwise, depending on how you approach the painting. The shield can be left off and painted separately. I drilled out both ends of the gun sight. The gun is designed to slide in the cradle, which makes it positionable for painting. When constructing the gun shield, note that the side panels run almost straight back; their position can be gauged by the crossbar that joins the two sides over the breech.

#### Marders, he painted

Construction of the Marder depends entirely on your painting techniques. Venturing to the airbrush bench, I had numerous subassemblies: the main hull, the entire gun assembly, two seats (both in and out), shell basket, twin spare tracks for the

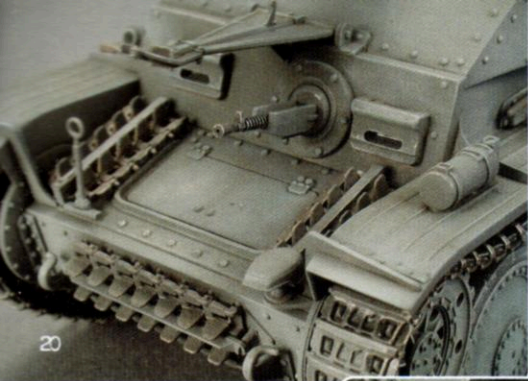
front, all wheels and the two side ammo racks. Marder "A" was sprayed with Tamiya TS-4 German Grey. This version has both travel locks in the downward position, the seats stored outboard, driver and radio operator hatches closed, foul weather tarp poles in place and front vision ports closed. Marder "B" was sprayed with Tamiya TS-3 Dark Yellow. This version has both travel locks locked, the seats positioned for sitting, driver and radio operator hatches open, foul weather tarp poles removed and front vision ports open. Airbrushing commenced using Tamiya acrylics and a Badger 200 airbrush. "A" was sprayed with Tamiya XF-63 German Grey, then lightened with XF-23 Light Blue. "B" was sprayed with XF-60 Dark Yellow, then lightened with XF-55 Deck Tan. "B" camo was sprayed first with a mix of XF-58 Olive Green and XF-61 Dark Green, then a mix of XF-9 Hull Red and XF-64 Red Brown.

"A" received a wash of artist oil paints cut with Grumbacher Gum Spirits of Turpentine. The wash color was made with Windsor & Newton oils, using Raw Umber, Lamp Black and a pinch of Prussian Blue. A straight Raw Umber wash was used on "B." Each vehicle was then drybrushed with lighter shades of oil paint and detail painting commenced.



For purposes of this review, wear and tear was kept to a minimum and no stowage was added. The gun sight, plus all periscopes and vision blocks, were filled in with Testors Clear Parts Cement and the rear Notek light was treated with Tamiya Clear Red. Markings are a combination of kit decals and Archer dry transfers. The subassemblies were all installed throughout the painting stage, with the wheels and tracks installed last after the rubber rims were painted on the roadwheels. The tracks were pulled down and super glued to the tops of the wheels. Antennas were added to each kit using a bit of Minimeca stainless steel wire.





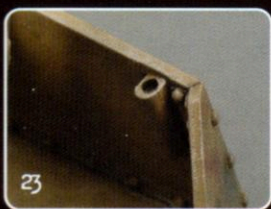
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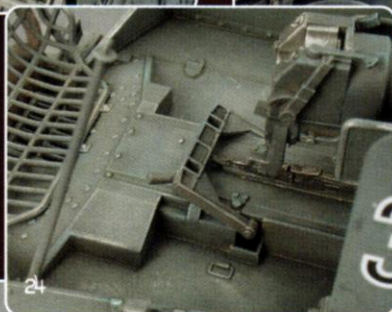
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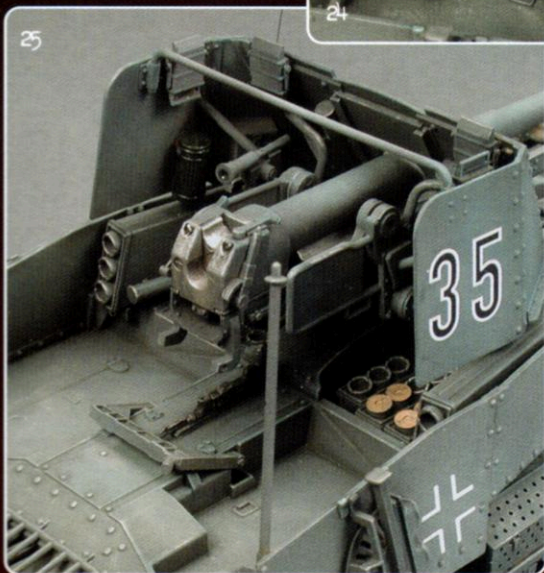
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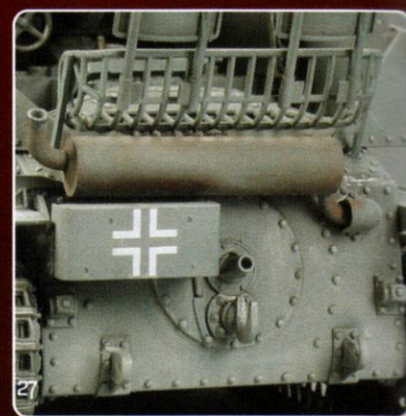


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20. Plenty of gear adorns the front of the hull. 21. The right front tool suite. 22. The forward gun travel lock is gorgeous. To assemble it in the upright position, the closing half must be left off until the gun is in position. Pay careful attention to the assembly schematic here. 23. Here, on the camo'd Marder, the foul weather tarp poles were cut off and the brackets drilled out. 24. The breech travel lock is designed to flip up and down. 25, 26. The fighting compartment. Eight shell butts are included and can be positioned in the ammo racks at your discretion. Gold printer's ink was used to paint the stored rounds. 27. The rear end of the gray version. A thin blend of Raw Umber and Burnt Sienna oils was applied to the mufflers and exhaust. 28, 30. My trusty Badger 200 was used to apply Tamiya acrylics over the Tamiya lacquer spray base. The camo pattern was created with the same Badger. 29. The driver and radio operator hatches can be positioned opened or closed. The Marder III includes four gas mask canisters in spring clips. Two fit in the fighting compartment and two are below the firing platform, for the driver and radio operator.



26



27

#### It's a wrap

The Marder III is a true gem. For a smaller kit, it has all the detail of Tamiya's larger offerings. Be prepared for a lot of clean-up, the fine detailing and many parts have necessitated numerous ejection marks on the parts and the Marder III is festooned with light sinkholes and extrusions. None of these is insurmountable, but you'll find them in a lot of unusual places. You've probably tackled the Italeri and Alan kits and Tamiya's Marder III is worlds apart. I'm going to take another crack at this kit in a few months when the after-market guys have caught up. It's a date.

—Joe Porter



28



29



30

## MMiR RECCE

**German Tank Destroyer Marder III (Sd.Kfz.139) 7.62cm Pak36(r) aug Gw.38(t).** Kit number 35248. Kit graciously provided by the manufacturer. Retail price \$42.00.

#### References

*Czechoslovak Armored Fighting Vehicles 1918-1948*, Schiffer Publishing, 1997. An exhaustive reference of everything the Czechs rolled out. Plenty of excellent 38(t) detail shots and a thorough history of all series developments.

*Praga LT vz.38/Pz.Kpfw. 38(t)*, MBI, 1997. A good, concise reference of the 38(t). You won't find the Marder III here, but you will find some color shots of the interior to get you on your way.

*Encyclopedia of German Tanks of World War Two*, Arms and Armour Press, 1993. No armor article is complete without checking the definitive source and the 38(t) family begins on page 44. Collectors interested in purchasing these finished pieces can contact [jporter@cosmicbovine.com](mailto:jporter@cosmicbovine.com)



# Giant Tigers

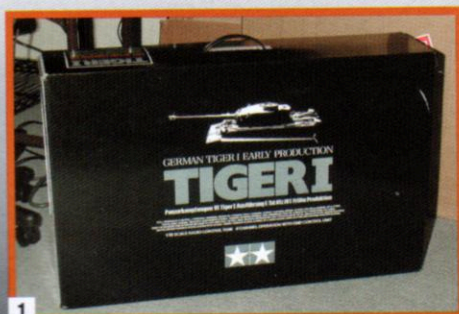
*stalking  
the  
earth*



**T**here has been a growing trend in Japan the last few years to make models move. This apparently started with a few individuals and later grew into an entire club. The idea is to build a tank model, just like any other, but with perhaps a little less "super" details. Then make it run. This has taken some interesting forms, like Panzer IIs running on ModelKasten tracks and even 1/76th-scale models!

Of all people, Tamiya decide to pick up on this trend and run with it. And run with they did. Maybe it would be more accurate to say that they picked up the trend, put it in a rocket and shot it to the moon. Their new 1/16th scale Tiger is perhaps the most awesome piece of model engineering this armor modeler has ever seen. It won't be everyone's cup of tea, but it's sure worth a closer look.

I've built some of the other Tamiya RC kits and I can safely say that they are accurate radio controlled models that also happen to have scale models parts to stick on. This kit is the opposite. It actually is a model, just like other that you may have built. It's a detailed scale model that runs. And, it's up to the usual Tamiya quality, but it has a little secret. Let's get into to it.



1



2



3

1. This is how it enters your world. It's like a suitcase, complete with handle.  
2. The black outer sleeve is removed to reveal this stunning piece of classic Tamiya artwork. If this doesn't get you charged up I don't know what will. 3. When the top flap is lifted (only partially seen here) there are several clear

plastic windows that reveal the various parts of the kit. This is a nice feature for retail shoppers, who may need the extra push to spend \$1,200.00 dollars! That's the drive sprocket at lower left and the tracks and sound unit at the upper right. The motor and gear box is at the lower right.

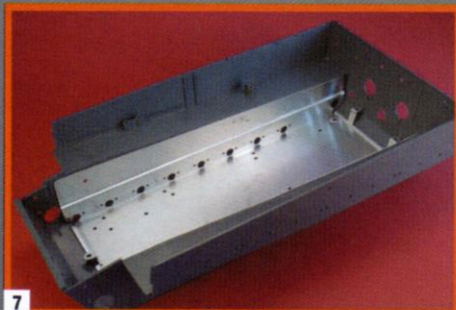
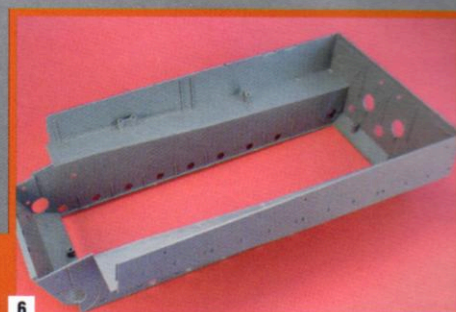




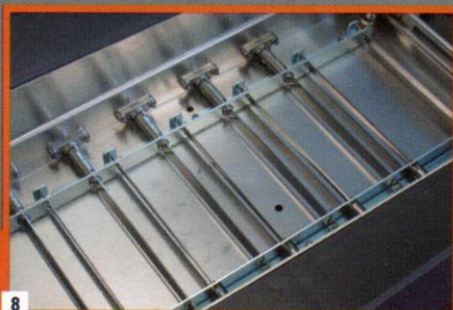
4. OK, everything is out of the box and has been spread out on the carpeting of our offices. The various components are all separately boxed. The plastic parts can be seen at the lower left. Our kit came with the four-channel radio



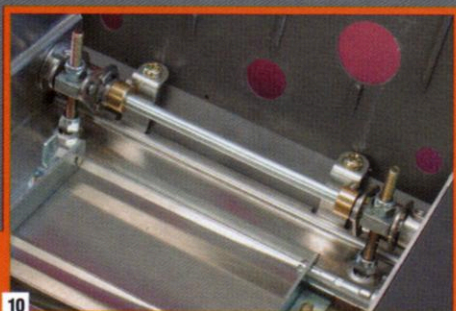
(the kit sold in the U.S. does not). 5. The hardware takes over. Getting ready to build the inner mechanisms. 6. This is the basic lower hull. Note that at this stage it is still a conventional plastic model. 7. Here's what makes the differ-



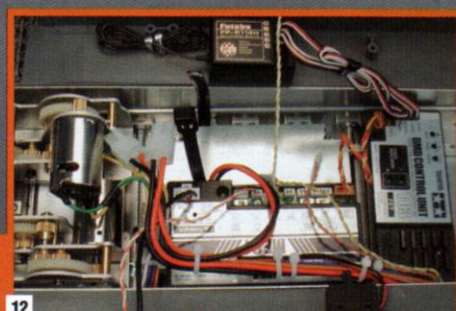
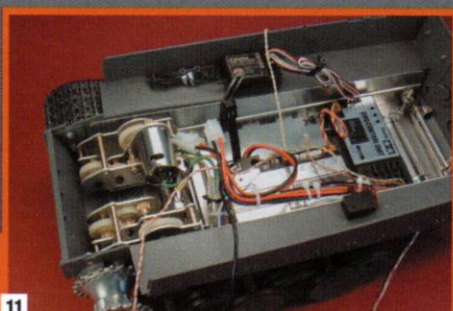
ence. The designers have cleverly made all the mechanical components fit into this metal pan. This, in turn fits into the plastic hull with screws. 8. The torsion bars in place. These work just like the real thing, holding the tank up



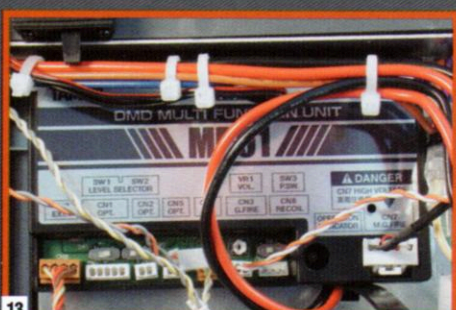
and allowing the suspension to adjust to the terrain. 9. These are the individual trailing arms. Each set of roadwheels fits onto an axle and these fit into the holes seen here. 10. These are the internal idler assemblies. They are fully



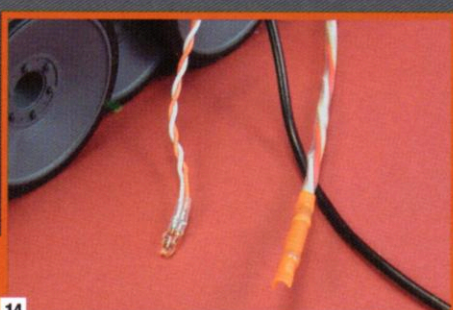
adjustable for proper track tension. 11. The interior starts to take shape. Most of the electronic components are in place here, along with the motors and transmission (a single unit). 12. Looking a little closer inside, the empty



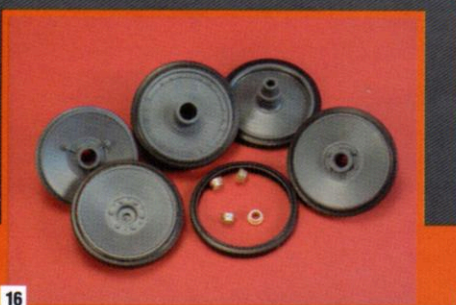
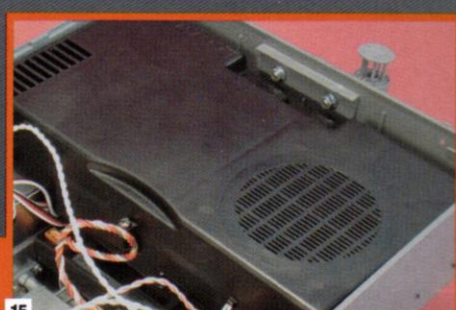
space where the batteries are installed can be seen. The two black straps are cinched to hold the two 7.2v batteries. Note the on/off switch on the sponson at the bottom of the photo. 13. This somewhat intimidating looking device is



the "DMD Multi-Function Unit." This is essentially the brain of the model and all of the various leads get plugged in here. This unit directs signals for the hull MG, the main gun (recoil, flash and firing), turret traverse and the



sound unit. 14. The light for the hull MG is on the left and the main gun flash unit is on the right. 15. The massive sound unit fills up the entire back end of the tank. It's loud, too! 16. Each of the roadwheels is represented by a plastic part. The double "sandwiched" pairs are secured with screws. All of the wheels use a real rubber tire. These are installed by stretching them over the plastic part. The round brass grommet install on the backs of the wheels. 17. These are the two types of roadwheel axles. 18. Each idler wheel assembly is metal and fairly complex. The two halves are secured with screws and the outer cap is styrene.



16

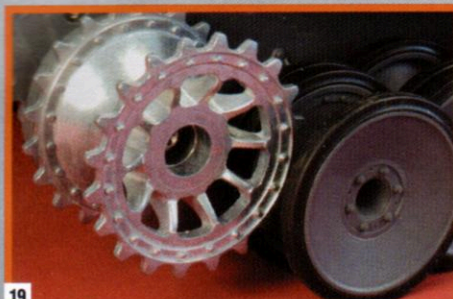


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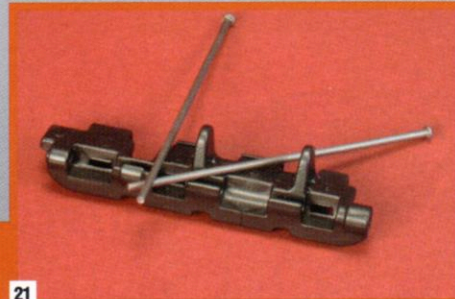


19

19. The drive sprockets are also metal and the left one is seen here being test fit on the hull. These also have plastic caps. Note the screw that secures it to the drive shaft. 20. The tracks come in pre-assembled lengths. All you have to do is secure the ends. 21. A close-up of one of the links and its pin. Yep, just

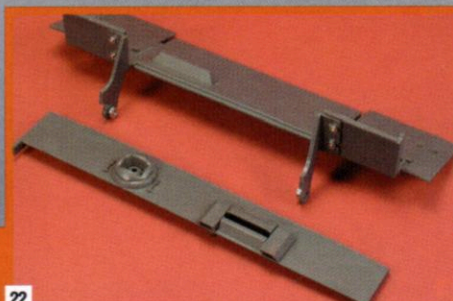


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like the real thing. Several extra of both are provided. Those pins would look pretty sexy on the spares typically seen stowed on the turret sides. 22. The front hull is a separate piece that gets secured with screws. Much of the hull can later be removed. 23. This is the business end of the hull MG. Note that

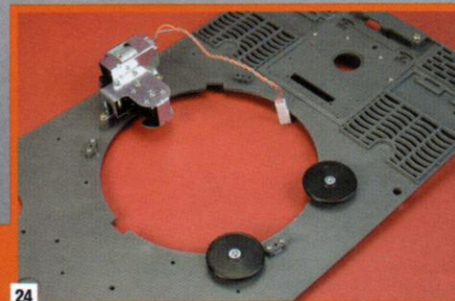


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the gun barrel (at the bottom of the photo) is already a gunmetal color. The bulb on the end of the lead gets inserted into the large end of the brass fitting and then the barrel and the fiber optic rod get inserted in to the small

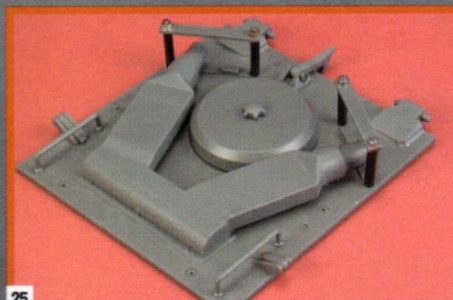


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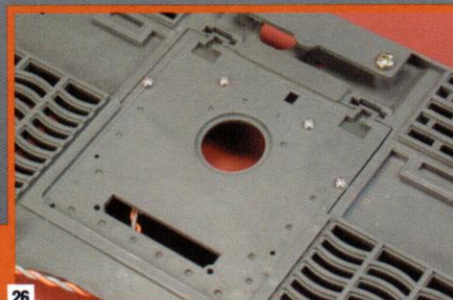
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end. 24. The turret traverse motor and gears installed underneath the hull. 25. The engine deck door. The tooling is really something here. The Feifel cleaner brackets use real bolts that are pretty much to scale. The black rods

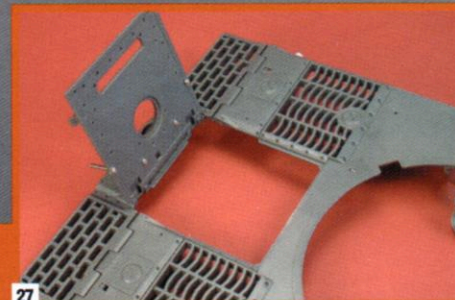


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are casings that space the threaded rods. Later, the Feifel will hook up like the real deal. 26. The bottom of the engine deck door. 27. The door can be made to remain workable, but it doesn't really give you access to anything.

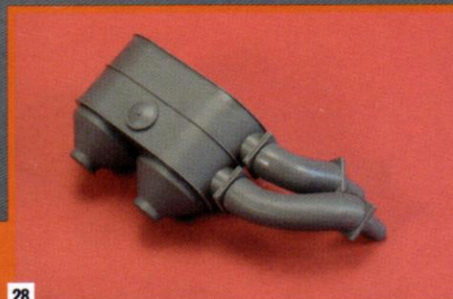


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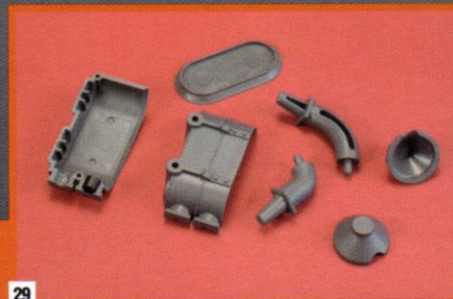
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The Feifel will also have to be disconnected to do this. 28. And speaking of... This is one of two filter housings seen on the rear hull. 29. These are all of the parts to complete one of the housings. 30. The turret, prior to installation

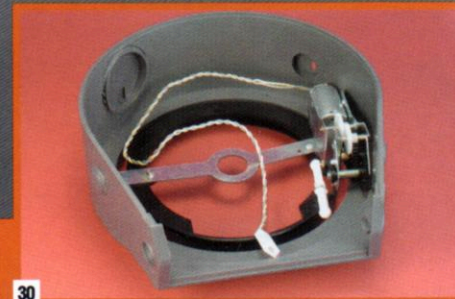


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of the main gun. Note again, that the mechanical parts of the turret sit on a module that is fastened to the interior of the turret, leaving the turret part uncompromised. The motor and assembly seen here are for raising and low-

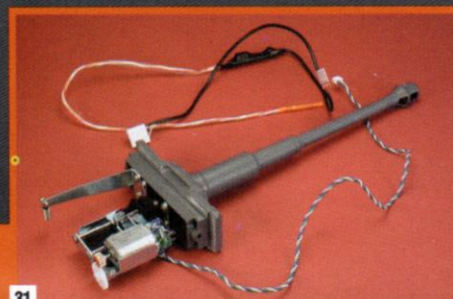


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ering the main gun. The wire lead will plug into the DMD unit. 31. This is the main gun. The motor with the blue and white lead is for the gun's recoil. The lead also runs to the DMD unit. The lead above the gun snakes down the barrel and provides the flash when the gun is fired. 32. The superbly rendered commander's cupola. Yep, that's a real spring. The support arm moves along the face of the hatch when it's opened or closed. The interior face of the hatch is fully detailed. 33. The top of the rear exhaust stack.



31

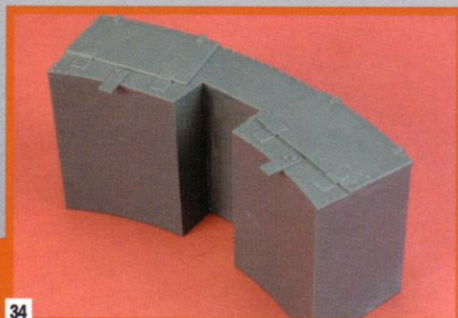


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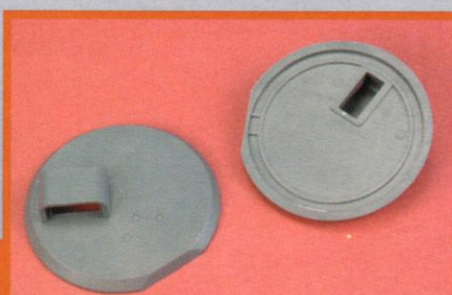


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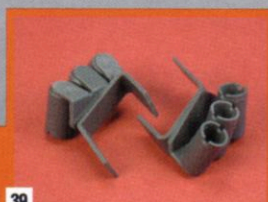
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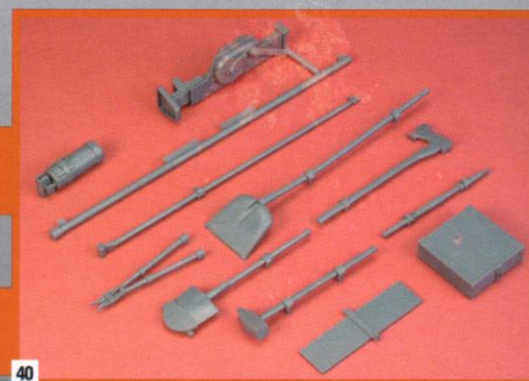
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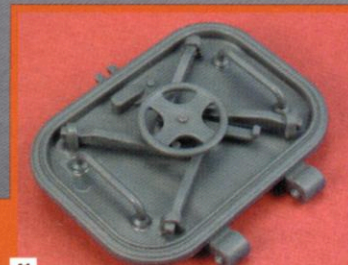
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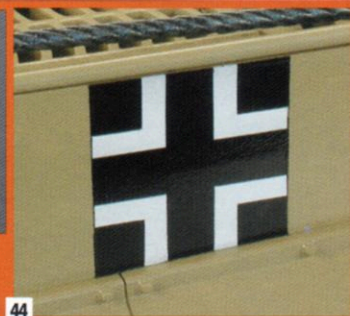
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46

34. There rear storage bin. 35. There is no detail on the inside on the front hatches—yet. The tow cable and cleaning rods assemblies are each a single piece. 37. The fire extinguisher looks mighty fine. 38. Check out that jack block. It even has the proper clasp! 39. The turret smoke launchers. These can only be glued on the top, if the turret roof is to remain removable. 40. All of the tools laid out for

review. Everything was beautifully rendered. Can you hear the aftermarket calling? 41. The level of detail even extends to the interior of the loader's hatch. 42. Watch out! Everything is built and in place. The turret roof lifts out and the hull can still be disassembled using several key screws. The turret lifts out just like a 1/35th-scale kit. 43-46 The kit was finished with an eye towards durability. The idea was to treat it as a RC model, rather than a static kit. With this in mind, it was painted using Tamiya spray lacquers from a can. These bite into the plastic and give a very hard finish. I used TS-3, Dark Yellow throughout. The tools were painted with Vallejo acrylics. Later, the entire model, including the tools, was sealed with Tamiya Clear, TS-13. Little or no weathering was applied. Perhaps the only drawback of this method is that the clear coat goes on with a slight sheen and this will deepen to a gloss with subsequent coats. The Feifel air cleaners use poly caps so that they can be quickly taken apart. I decided to mark the tank a bit differently. The model depicts the first tank ace Otto Carius, number 213. His unit, the 502, initially used these large cross markings in combination with small turret numbers. The cross was made using a custom mask that appears on the next page. The numbers are 1/35th scale Archer transfers. I used the black outline style and then filled the interior with acrylic paint. Combining a 2 and a 5 made the flat-topped number 3.



A couple of Tigers are seen here in action at the 2001 TamiyaCon. They constructed a mock battlefield on one of their off-road RC tracks, which was complete with burnt-out buildings and other terrain features. The Tigers squared off against a bevy of RC 105 Shermans.



46



47

46. This thing will really move! It can be a bit difficult to control at first, but with practice, the movements become quite easy. With the 4-Channel radio the actions include both forward and reverse, as well as right/left arrested track steering. The turret traverse and the gun elevates. And, as previously described, the gun recoils when fired and this includes a muzzle flash and a "chassis jump." 47. Both tanks are equipped with "battle-units." These units (which are not part of the kit reviewed here) hook into the DMD unit and allow one tank to temporarily disable another.

## MMiR RECCE

**Tamiya Tiger I German Tiger I Early Production 1/16 Scale Radio Control Tank, 4-Channel Operation with DMD Control Unit.** Kit number 56010. Kit very graciously provided by the manufacturer. Suggested U.S. retail \$1,198.00. This kit was initially unavailable for review, so Mr. Uwe Feist was kind enough to provide us with a kit to begin this article while we waited on a sample from Tamiya. It should be noted that the kit reviewed here differs slightly from the version sold in the United States. The U.S. model does not include the 4-Channel RC unit, the two 7.2v batteries or the wall charger. In all other respects, the kits are identical.

### References

You need reference on a Tiger? Please! Here are the two I used:

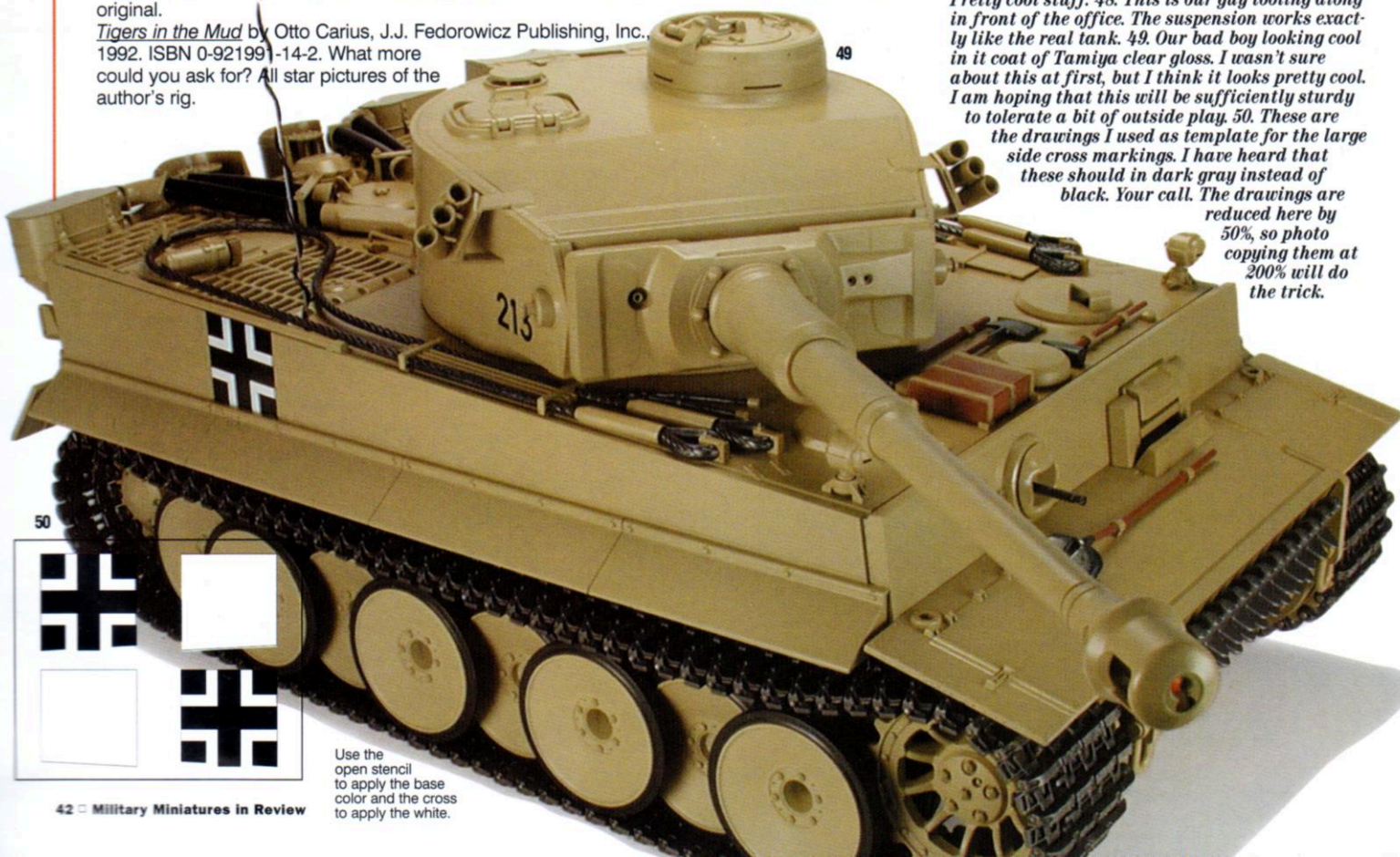
*Panzerkampfwagen Tiger* by Uwe Feist and Bruce Culver, Ryton Publications, 1992. The biggie, crammed with all kinds of photos, drawing and illustrations. Some cool shots of the Otto Carius original.

*Tigers in the Mud* by Otto Carius, J.J. Fedorowicz Publishing, Inc., 1992. ISBN 0-921991-14-2. What more could you ask for? All star pictures of the author's rig.



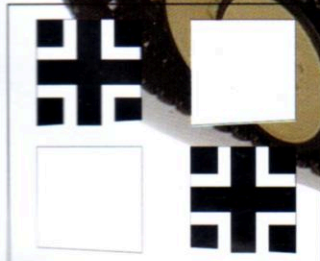
48

Pretty cool stuff. 48. This is our guy tooling along in front of the office. The suspension works exactly like the real tank. 49. Our bad boy looking cool in its coat of Tamiya clear gloss. I wasn't sure about this at first, but I think it looks pretty cool. I am hoping that this will be sufficiently sturdy to tolerate a bit of outside play. 50. These are the drawings I used as template for the large side cross markings. I have heard that these should in dark gray instead of black. Your call. The drawings are reduced here by 50%, so photo copying them at 200% will do the trick.



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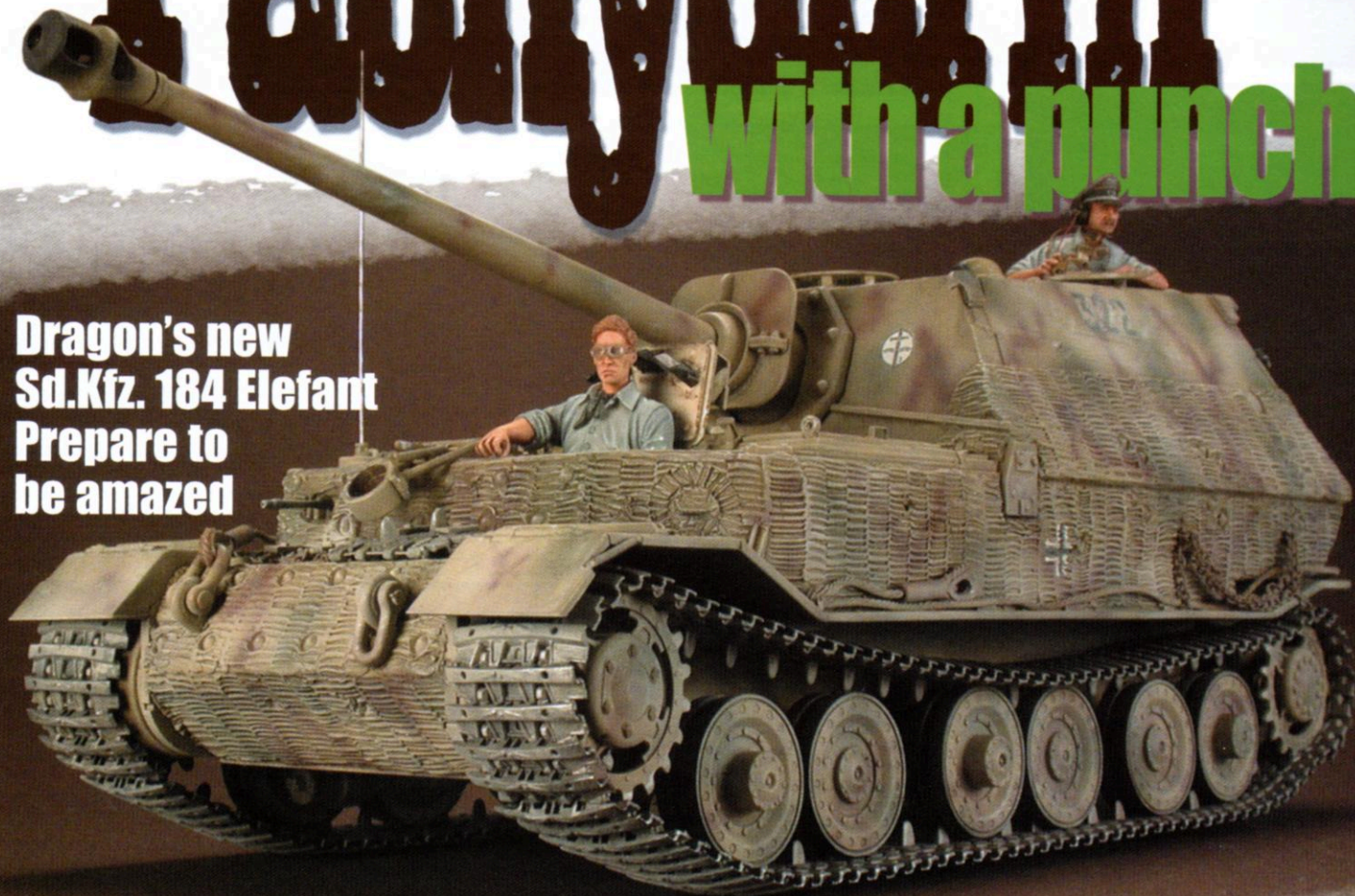
Use the open stencil to apply the base color and the cross to apply the white.



# Pachyderm

## with a punch

**Dragon's new  
Sd.Kfz. 184 Elefant  
Prepare to  
be amazed**



**D**uring the development of the Tiger, Dr. Ferdinand Porsche designed a heavy chassis (VK 4501) which was passed over in favor of the Henschel chassis in October 1942. Porsche had already produced 90 of his mammoth chassis units and the decision was reached to utilize them in a different role. The new heavy assault tank would feature a fixed superstructure and mount the 88mm PaK 43/2 L/71. The first prototype rolled out in March 1943 and the 90 tanks were completed by May. A pair of Maybach HL120TRM engines were mounted in the center section, so there was no interior passage between the fighting compartment and the driver's compartment. At over eight meters in length and weighing 65 tons, the massive new Panzerjäger was dubbed Ferdinand after its creator. The 90 vehicles were split between two heavy tank battalions, schwere Heeres Panzerjäger Abteilung 653 and 654, in time for the Kursk offensive. These two units were combined with Sturmpanzerabteilung 216 (a Brummbar unit) to form the 656 Panzerjäger Regiment.

The opening of the Russian offensive was disastrous for the Ferdinands. Several were lost to fuel line fires. In cross-country travel, the Ferdinand could only move at a walking pace and with no anti-personnel defenses was vulnerable to attack from the sides. Nearly half of these beasts were destroyed in Russia. But with proper support and protection, the tank was a deadly adversary. From July through December 1943, the 656 Panzerjäger Regiment destroyed over 800 Soviet tanks and other vehicles.

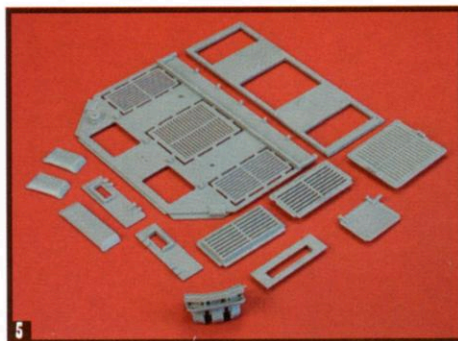
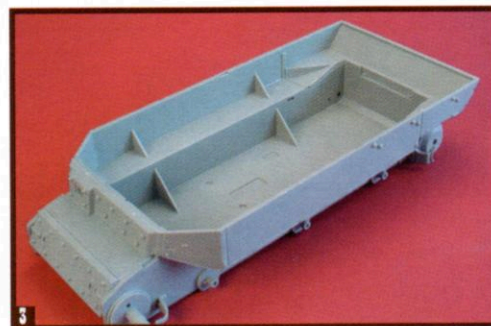
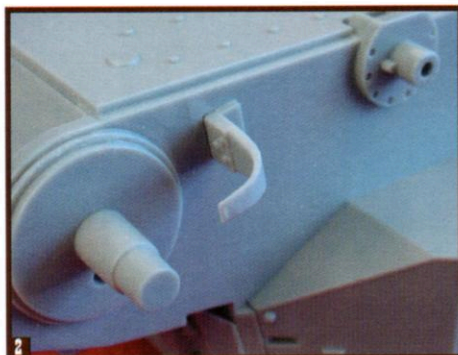
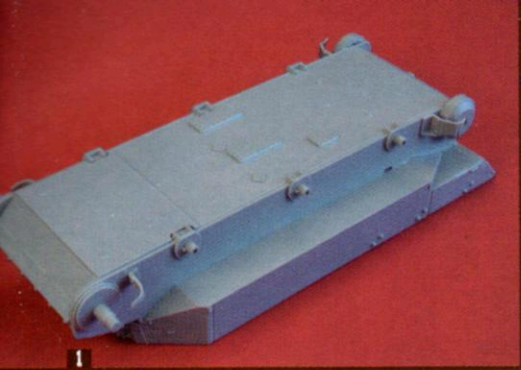
With such an impressive record, efforts were immediately undertaken to improve the Ferdinand. In February and March 1944, the 48-50 surviving vehicles returned to the Nibelungenwerke in Austria for modifications. A commander's cupola was added, based on the Sturmgeschütz design. The two headlights were eliminated and vertical braces were added to the main gun shield for reinforcement. The jack and jack block were moved from the nose to the rear. A large tool stowage box on the right and a sledgehammer on the left, were also moved to the rear. A MG ball turret was fixed in

front of the radio operator's position. Most received a coating of zimmerit paste. All Ferdinands were formed into Panzerjäger Abteilung 653 and the majority of the unit fought in Italy during the spring of 1944. By general order dated May 1, 1944, the Ferdinand was renamed Elefant, though the crews continued to refer to the tanks as the "good ol' Ferdinand." The unit returned to Russia in the spring of 1944 and by the end of that year, the remaining 13 or 14 Elefants were formed into Panzerjäger Kompanie 614. At least four Elefants were still in service during the battle of Berlin.

### **Chapter six: Pat runs away and joins the circus**

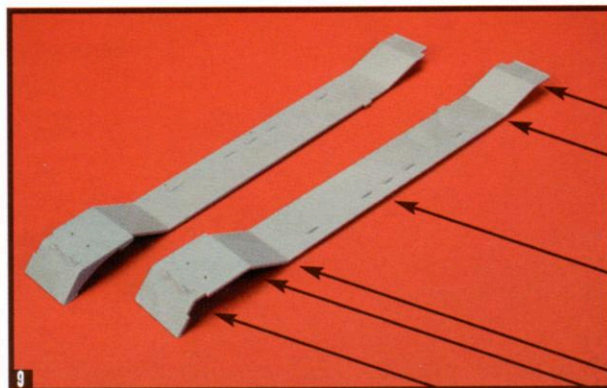
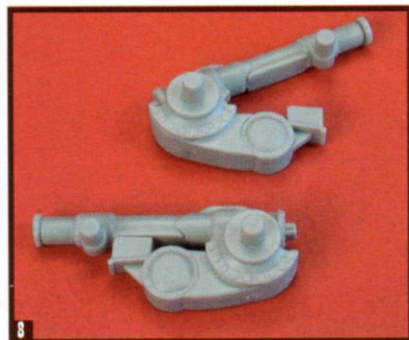
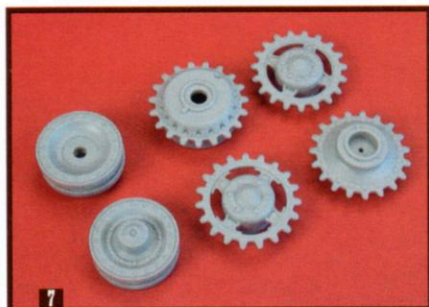
This kit absolutely flies together. The supersize instructions are enhanced by blue shading indicating where zimmerit should be applied, if desired. I desired and assembled the kit with zimmerit in mind. The running gear and lower hull comprise the first 13 steps. The workable suspension was attached but all wheels and sprockets were left off for painting. The jack and cooling fan shroud on the back end were left off as well. Spare tracks on the front and the MG barrel were set aside. Step 13 has





1. Dig in. The lower hull with its amazing variety of hatches and plates. 2. Close-up of the front spindle and sprocket cleaner (to keep mud from accumulating inside). 3. The back end of the hull is a separate piece. It's

beautiful, man. 4. The lower hull features integral struts for reinforcement. Way to go Dragon. 5. Layout of the forward engine deck with screens, vents and hatches. 6. Room with a view. The assembled driver's hatch with its three periscopes. 7. A look at the sprockets and road wheels. The detail here is amazing. 8. Two of the six working suspension arms. If you choose to have your Elephant crossing a ditch, these babies will provide the appropriate lower sag. 9. The one-piece fenders. These fenders were actually made of seven different panels, so the breaks were scored with a hobby knife.



a slight glitch in the instructions; the center fender brackets (parts Y17) are slightly different in shape than as drawn, so be careful there. Steps 14 through 22 deal with the upper hull, with the bulk of the kit parts involved. The breech is a work of art. Dragon's forthcoming Ferdinand release (#6133) is evident here; the commander's hatch is a flat two-parter, with the upgraded cupola provided to fit over it. I had to ooh and aah a bit here; the weld bead around the bottom edge is pure joy. The multi-layered engine deck is awe inspiring and fits together perfectly. (I know I'm gushing here, but I really enjoyed this kit!) There are several positionable hatches: driver and radio operator, commander and gunner, two rear periscope ports in the rear roof and the monstrous circular hatch in the rear with its integral shell port in the center. Parts E10 (the stops for the forward hatches) in step 21 are a bit hard to discern, so their position was checked against reference photos. Another indication of the forthcoming Ferdinand kit is the pair of notches in the forward hull for mounting the headlights. If you're not going to apply zimmerit, these must be filled in.

During the construction phase several minor upgrades were added. The rear cooling fan screen was replaced with that from Eduard's etch set (#35232) for the Italeri Elephant; this wasn't necessary, as it turned out, since the screen is impossible to see when the vehicle is completed. A photo-etched wing nut was added to the jack bracket and four etched Eduard handles to the engine vent covers. (The center vent has separate kit handles, but the handles on the two side vents are molded on.) Eduard's Italeri Elephant set also provided the drilled plate for the antenna mount on the upper rear of the hull. (This is a strange fixture; most wartime

photos show the antenna positioned in the circular mount next to the radio operator's hatch. The antenna doesn't even appear in many photos; it was usually stashed in the tube on the right fender.) Wartime photos of damaged Elephants show the fender design; seven separate panels comprise each fender, so these breaks were scored with a hobby knife. Four brackets for the tow cables were replaced with Eduard parts. The travel lock was reworked with plastic strip, sheet and rod for a crisper appearance. The sledgehammer on the rear of the tank required a bit of work. The head rests in a unique boxed bracket, which was measured, scored and cut from brass sheet. The molded brackets were scraped from the kit part and a handle clasp was added from an ABER tool bracket set. Minimeca stainless steel wire was inserted into the drilled antenna mount, then measured against the storage tube on the right fender.

### The vertical reach of the average Russian

With everything assembled, there were several components set aside for the zimmerit and painting stages. These included the wheels, barrel, gunner and driver hatches, spare tracks, MG barrel, four towing shackles, travel lock, jack, sledgehammer and rear fan shroud. Then I studied dozens of photos in the Fedorowicz reference and noted numerous differences in the zimmerit patterns. In fact, the pattern seems to be different on almost every Elephant. Some had almost perfect patterns with

slight ridges; others are much rougher, with troughs deep enough to lay a pencil inside. Dragon provides some spectacular decals for the 653, so I concentrated on photos of that unit. The 'zimmerit scale' was found in a close-up of the large flat bracket that secures the upper and lower hull on each side. This bracket is the same width as two rows of zimmerit, so a pattern tool was made by shaping a flat piece of resin and gluing it into a handle of large plastic tubing. Apoxie-Sculpt was used for the zimmerit paste, mixing the two parts into a wad the size of a large gumball. Apoxie-Sculpt sets in 60 to 90 minutes and the zimmerit was applied in four stages, using four mixtures. The mixed putty ball was continually pinched and pressed until flat, then sections were cut with a hobby knife and stuck to the tank. The rear fan shroud was completed separately, then attached to the tank. Small details were continually noted since they had to be recovered after the zimmerit was applied. The height of the zimmerit on the hull sides varies by tank; some had the paste below the pistol ports, some above. Not all Elephants had zimmerit on the front fender panels and the pattern on the front bolt-on armor varied considerably. The 653 photos show a circular pattern around the forward vision slits.





10. Zimmerit application began on the left side. Before the Apoxie-Sculpt hardened, small details were cleared. 11. Tanks of the Panzerjäger Abteilung 653 had notable differences in the height of the Zimmerit. Here the rear and side pistol ports can be seen below the level of the putty. The upper sledgehammer bracket was designed and cut from brass sheet. One of the spare track hooks disappeared into the universal



black hole and a substitute was made from strip plastic. 12. Here the air deflectors have been completed along with the fan shroud; the shroud and toolbox are now attached. The kit sledgehammer was reworked and an Aber clamp attached. 13. The lowered travel lock was attached after the Zimmerit hardened. When the lock was folded down, the rear leg disengaged from the twin brackets. Next to the round vision slit plates for the radio operator and driver, note the square holes cleared of Zimmerit. These are actually depressions for mounting the headlights. If you're not careful, you might mistake these for view ports and find yourself patching them with Zimmerit later. 14. Reference photos show the hull joining plate is the same width as two rows of Zimmerit. Here's the homemade Zimmerit tool pointing to that area. 15. Elephant butt. Note the divisional insignia. 16, 17. The figures are a mix of Tamiya, Jaguar, Ultracast and Hornet. 18. Hey dude! Think fast!

Perhaps the most important note in Zimmerit application is where NOT to apply it. For major repairs, the superstructure had to be lifted off by crane. Thus the break between the upper and lower hull must remain clear, along with the large bolts around the body. As the putty hardened, a piece of plastic tubing was dipped in water, then rotated around the head of each bolt to clear the way. Some chips, wear and battle damage were added to the Zimmerit; my goal was to depict a vehicle that had seen action, had its Zimmerit damaged and been repainted.

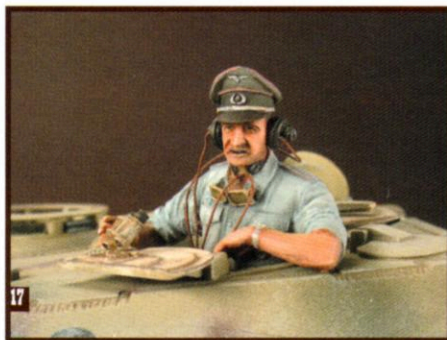
### I shot an Elephant in my pajamas (Why was an Elephant wearing your pajamas?)

The body and remaining subassemblies were shot with Tamiya TS-3 Dark Yellow spray lacquer. Airbrushing commenced using Tamiya acrylics and a Badger 200 airbrush. All parts were sprayed with XF-60 Dark Yellow, then lightened with XF-55 Deck Tan. The unusual camo pattern, featuring light olive blotches and an almost tree branch effect for the red-brown, was taken from color plates in the Fedorowicz reference. Tamiya XF-58 Olive Green plus XF-61 Dark Green was sprayed first, followed by a mix of XF-9 Hull Red and XF-64 Red Brown. (Sidebar: During the first Russian campaign, the 654 Panzerjäger battalion used a distinct angled grid pattern camo on their tanks. The 653 used a variety of patterns.) There are also several photos in that reference which show the interior of Elephant hatches painted in the light interior color.

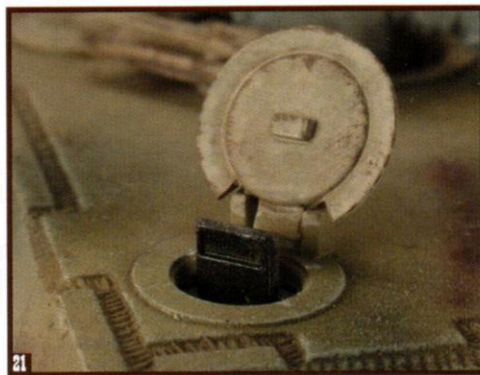
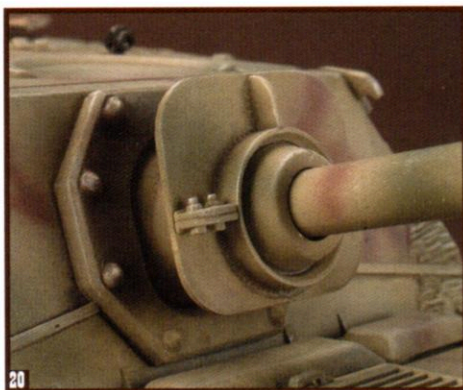
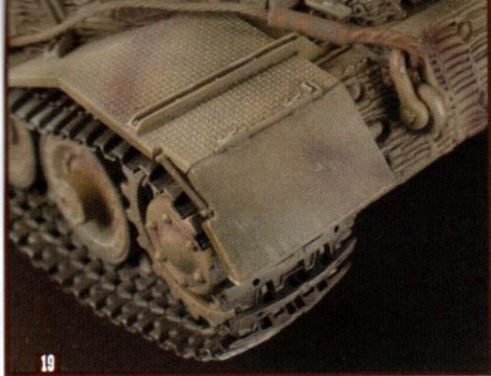
The Elephant next received a Raw Umber wash. Kit decals were used for the 653 unit insignia and hull numbers and the three crosses on the Zimmerit were hand painted. Dragon's unit crests are dead on, providing options for the 1st, 2nd and 3rd company of the 653. The insignia depicts the Nibelungen Sword and waves of the Danube River. The tank was then drybrushed with lighter shades of oil paint and detail painting commenced. The periscopes were painted with Tamiya Semi-Gloss Black and then the lenses were coated with Tamiya Clear. Metal wear was lightly added using silver printer's ink and a #2 pencil. GREIF tow cables were mated with ends from VP's Tiger update and attached to the towing shackles. A tow chain from Hudson & Allen was hung on the left side. The wheels were installed last, after the rubber rims were painted black and weathered.

### Elephant men

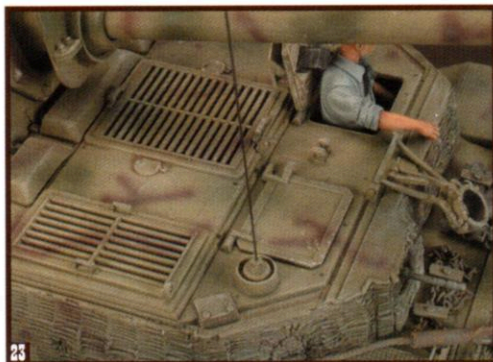
The Fedorowicz book shows a remarkable variety of Elephant crew uniforms, ranging from black panzer tunics to sweaters, overalls, shorts and pith helmets. I settled on two figures wearing only the mouse gray shirt in the Russian summer of 1944. I had also decided early on to pose the commander in the gunner's hatch. The commander is made of VP body parts, a head from Ultracast, Tamiya binoculars, and wired up headphones and throat mike





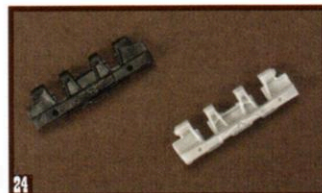


19. The right front fender spring. 20. A close-up of the beefy mantlet. 21. Boo! That cool little periscope port on the right side. 22. The front end with its large armored bolts and lugs. 23. The engine grate area is pretty sexy. 24. Side by side comparison of unpainted Jaguar (left) and Dragon track link.




enough to achieve the proper droop.

Five Jaguar spares were hung on the



rear track hooks. Dragon tracks were used for the front spares, which were mounted on the hull with square retaining plates. The front link on each was drilled out and a wire track pin inserted. Based on photos showing Elephants with recovery gear piled in front, this tank has a chain in place of the right spare tracks, with the square plates holding it in place. The Jaguar tracks have the added bonus of being black; once they were in place, a rusty metallic wash was applied. Finally, the Elephant was given a good dusting using airbrushed Tamiya XF-55 Deck Tan.

### It's a wrap

I originally intended to build this kit using Jaguar's Elephant Interior, which was designed for the Italeri kit. Jaguar, however, has indicated that they're reworking the interior to fit the Dragon kit, so we'll take another stab at the Elephant when that's released. Not only is this kit one of Dragon's finest, but it's also one of the best armor kits ever produced. Aside from the tracks, the fit, accuracy and attention to detail are superb. It's been a long while since the Italeri Elephant was released and the wait was worth it. 

—Joe Porter

from a Dragon figure set. His Schirmmütze wouldn't accommodate the headphones, so to be a bit different the headphones were cocked to the rear with the wires draped over his right shoulder. The driver is made of VP body parts with a Hornet head and a spiffy scarf from Apoxie-Sculpt. The clear goggles are found on the clear fret in Dragon Kübel wagons, with a paper strap added.

### Tracking the Elephant

The Dragon kit features individual link injection tracks and this is where I encountered the only problem in this kit. Links were worked around the front and rear sprockets and the fit just wasn't satisfactory. Likewise on the 'straight-aways.' I pulled out the set of Jaguar Link Model Workshop tracks which were set aside for my future 'super Italeri

Elephant' project, then noticed something odd. First, the Ferdinands used different tracks before their refit; photos in the Fedorowicz reference show a visibly different track style in the first Russian campaign. Secondly, Fedorowicz shows dozens of post-refit Elephant photos. There is a distinct flattened-V mark on each link. I was using this V from the photos to make sure the tracks were mounted correctly and thus discovered that this mark is upside down on the Dragon links. (We'll take a break here while everyone gets out their books. Please talk amongst yourselves.) The pattern is correct on the Jaguar links and even though they were designed for the Italeri kit, they fit the Dragon Elephant perfectly. Links were again pressed onto the sprockets and the straight-aways were assembled with ease. An important note is that the upper length barely touches the two front and two rear roadwheels; the tracks mainly rest on the two center roadwheels. The tracks were assembled with Tamiya Extra Thin Cement and remained flexible

## MMiR RECCE

**Dragon Sd.Kfz. 184 'Elefant.'** Kit number 6126. If Dragon gets any better, we won't be able to stand it. Suggested retail \$39.98. Sample kit graciously provided by the manufacturer.

**Jaguar/Link Model Workshop Elephant Tracks.** Item number LM-002. Suggested retail \$17.98.

**Apoxie-Sculpt.** Gather the minstrels as I once again sing the praises of this amazing product. You can order direct at 715-386-9097, or online at <http://www.apoxie.com/aves/apsculpt.htm>. \$21 puts four pounds in your hands.

### References

*Combat History of Schwere Panzerjäger Abteilung 653.* J.J. Fedorowicz Publishing, 1997. Karlheinz Münch's definitive reference on the Elephant units. Over 550 pages packed with photos, tables and campaign information, plus color plates and line drawings. There's plenty of info on StuGs and Jagdtigers, as well. If you don't have this book, you might consider selling a kidney.

*Elefant - Jagdtiger - Sturm-tiger.* Schiffer Publishing, 1990. Originally published in German by Podzun-Pallas Verlag. Handy concise reference on these three big 'uns.

*Encyclopedia of German Tanks of World War Two.* Arms and Armour Press, 1993. Stats and info on the Elephant and Ferdinand are found on pages 140-141.

[www.kithobbyist.com/AFVInteriors/](http://www.kithobbyist.com/AFVInteriors/) If you want to see what the interior of the Elephant looks like, this is the website to go to. Features a section on the Aberdeen Elephant. The vehicle was in sad shape when the interior was photographed, but you can still see the layout.

Collectors interested in purchasing this finished piece can contact [jporter@cosmicbovine.com](mailto:jporter@cosmicbovine.com)





# STUBBY 8-RAD

converting the tamiya kit into a rad with a punch



**T**he Aufklärung (Reconnaissance) battalions of the Panzer Divisions made a request in early 1942 for a Panzerspähwagen

with a substantial increase in weapons capability. This increase in weapons capability was required to engage enemy armor and general ground targets, if necessary. The 7.5cm StuK37 L/24 was available in substantial surplus numbers due to the up gunning of both the PzKpfw IV and the StuG III.

The Schwerer Panzerspähwagen 8-rad series, produced by Deutsche Werke and Schichau were in successful production from 1936 to the autumn of 1943. Subsequently, Büssing-NAG took over the production of the heavy armored car series with their elegant, futuristic 234/1-4 series. The Sd.Kfz 233 was produced from October 1942 to October 1943 (10 converted for Sd.Kfz 231/232). Despite nearly a full year's production, only 109 were produced. In essence, the Sd.Kfz 233 was an altered 231 with the turret removed, an open top superstructure, cut outs in the right side and an offset, floor mounted StuK37. The simplified, unarmored visors can identify early 233s. Later versions, as with the 231/232, had armored visors. The protected armored shield on the nose of the vehicles was introduced in early 1940 and discontinued in May 1942. This was due to the up armoring of the hull and turret.

Despite their great rarity there is photographic proof that some Sd.Kfz 233 received, or added this additional protective shield. Very late 233s also had a raised superstructure, similar to the late Sd.Kfz 251/9. In fact, there are many common interior

details of both vehicles. Ammunition is variously reported to have been from 32 rounds (HE, smoke and AP) to 55 rounds. The ergonomics of the vehicle's interior suggest the lower number to be more accurate. In addition to the main armor and side arms, the vehicle also carried the MG34/42 with up to 1,500 rounds.

Issued as a platoon of six vehicles to the Reconnaissance Battalion of the Panzer Divisions, this vehicle saw service on all European fronts and North Africa. Service with the Afrika Korps has generally provided the enthusiast with most of the quality combat pictures.

## Modeling the 233

Those wishing to construct this model will almost certainly need to convert. To my knowledge, only the Italian company Criel has produced this as a conversion kit. As to its quality and availability, I cannot comment, never having seen the kit. My conversion uses a variety of kits and accessories. The two most important are Tamiya's very old (early 70s) number 36, based on the Sd.Kfz 231/232 and their much more recent Sd.Kfz 251/9, kit number 147. In addition to these plastic components, I also used Eduard's 35.060 etched set for the Sd.Kfz 232. Finally, I used parts of Aber's 35 074 for the Sd.Kfz 250/8. With the exception of Aber's set, the other three have various shortcomings that necessitate considerable improvement. The flaws in the first three kits are described below. Considering that the Tamiya kit is approaching its thirtieth birthday, it's

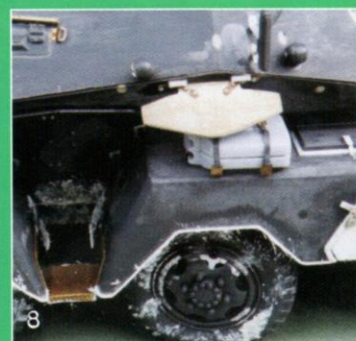
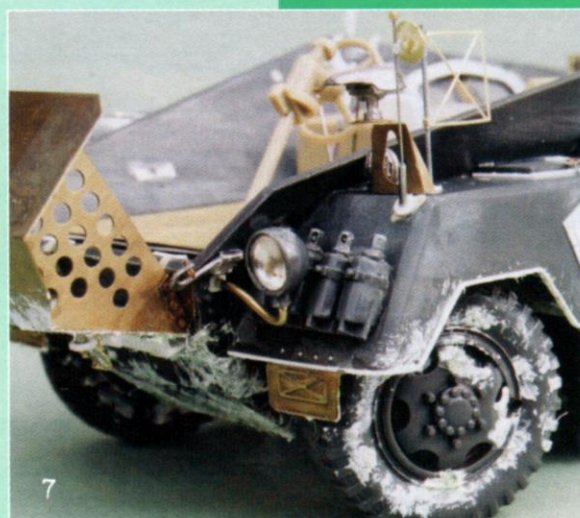
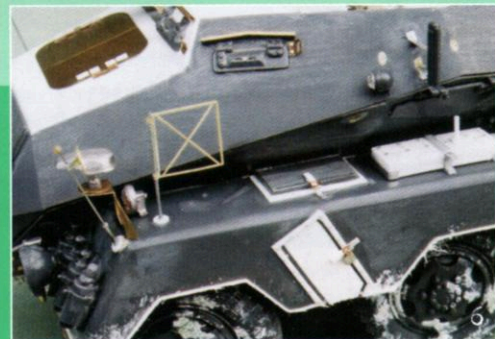
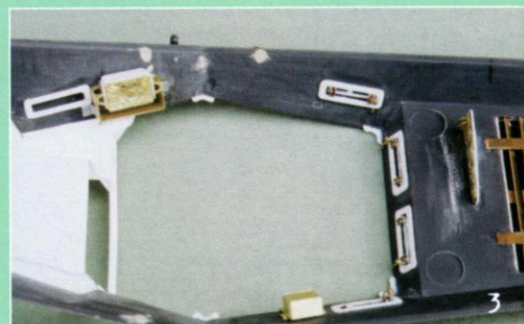
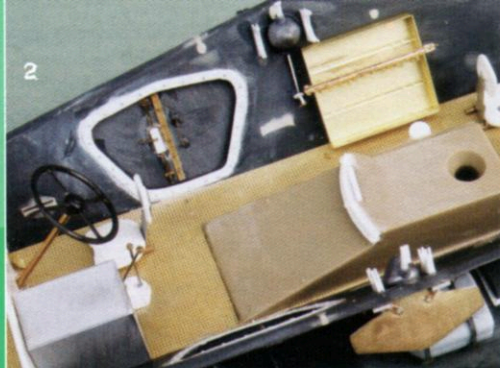
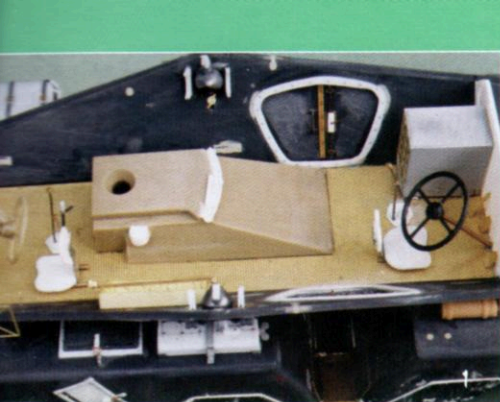
really not too bad, although the detail is generally heavy and rather crude. The thickness of the hull plastic, whilst not an impediment to the Sd.Kfz 232, does create severe problems to the open topped nature of the Sd.Kfz 233. Considering that the Sd.Kfz 251/9 is a fairly recent kit, the gun is really very poorly detailed, with substantial inaccuracies and botched detail.

Eduard's brass is offered at a highly competitive price, but as always, we get what we pay for. Any time Aber offers a similar etched set, I will always go for the Polish equivalent. One of the main failings of Eduard's etched military vehicle sets is the unrealistically thin etched brass. Usually the problem is the other way, too thick! As with all etched metals, it is only two dimensional and therefore raised curved detail is portrayed as a flat raised piece of detail. In these circumstances it offers little improvement over the kit parts.

## On to the construction

I religiously followed the Sd.Kfz 231/232 instructions from stage 1 to 5, with the exception of the side access doors (C4-7), which I left until later. As most readers will be aware, these vehicles had a sophisticated steering system. I recreated this with little effort; just remember that the forward front two sets of wheels turn one way, and the rear two the opposite, thus giving them a superb turning circle. This and the detailing of the armored air valves on the tires were the only additions at this stage of construction. Step 6 was skipped and the fenders dealt with. These are rather crude, especially around the rims and the internal stowage bins. 10x30 plastic strip was carefully glued around the bottom of the fenders. At 10/1000, this strip will easily bend to most shapes. A little more solvent at angle changes is enough to soften the plastic to distort to shape. The lids to the internal stowage were cut out and replaced with strip and sheet plastic. I





1, 2. The first major internal step is to produce a floor. Fortunately, the existing detail is at correct floor level. I installed an appropriate tread plate, in this case, Accurate Armour's. The gun base is from the Tamiya Sd.Kfz 251/9 Stummel. This was cut away from the kit part according to figure 3. The seal around the lower access door was painstakingly cut from styrene using the kit's door as a template. A variety of other etch and scratch built parts can be seen. 3, 4. I opted for the earlier (and less complex) unarmored visors. The gauge plate is an Aber item. 5-9. These shots illustrate the various details added to the exterior of the vehicles. The etch items are mostly from Eduard's set for the Sd.Kfz 232. The fenders of the Tamiya kit are rather crude, especially around the rims and the internal storage bins. Plastic strip was used to detail the bottoms of the fenders. The lids to the internal storage boxes were cut out and replaced with strip and sheet plastic.

then glued the four fenders to the lower hull.

The Sd.Kfz had a unique signaling system, all done by mirrors! A mid-way internal light faced at 90° to the line of the vehicle. Reflectors could be slid through gaps on either side of the lamp, thus signaling could be conducted to the fore or aft of the vehicle. As to whether this facility was continued in the Sd.Kfz 233, I do not know. Certainly the flaps were present. Eduard provides etched brass for the outer detail, but nothing for the inner. I made these using parts from the spares box. Around the lower hull crew access is a seal. I used the doors (C4-C7) glued together as a template to make the perimeter seal to the openings. Cutting the inner surplus whilst keeping a constant width was quite difficult and took a lot of patience. The kit's beveled edge to this opening aggravated the fit problem. After very carefully solvent gluing the seal, I used copious quantities of Pacer's ZAP superglue, then I filled the beveled recess with an epoxy filler. The tiny bolts were from sheet aluminum punched into a piece of vulcanized rubber using a Dremel tool burr with the head snapped off. The supplied Eduard access doors are much too thin and when taken

with the two-dimensional hinges I decided to stick with the kits. The thinness of the brass, together with the over thickness of the plastic, would have seriously aggravated an appearance that was already marginal. I did, however, use the locking mechanism supplied with the Eduard doors.

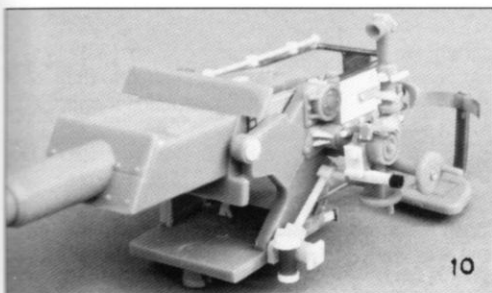
#### Super cut

The most difficult part of the project was the cutting out of the superstructure top. Due to the poor quality of the driver's hatch, I decided to

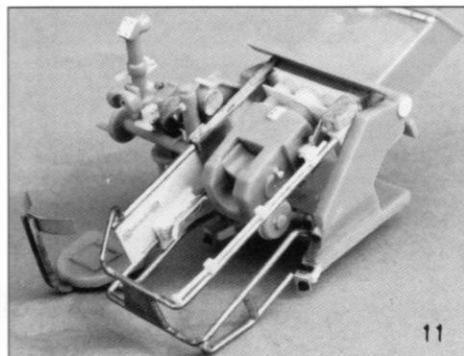
extend the cut down to the limits shown in fig 1. This was done very carefully by scribing a line with a P-cutter approximately 1mm back from the front edge. I followed this up with a circular saw set at a very slow speed. The next stage is both time consuming and very boring! You have to file/sand the exposed edge back to a 0.25mm exposed edge. As the plastic hull is approximately 1.5mm thick, the reader can appreciate the problem. Remember, however, that the only place you can see the exposed rim is the open superstructure. Don't bother to create



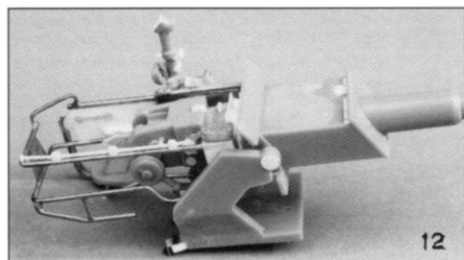
the bevel other than in this area. The forward sloping plate with the driver's access doors was simply replaced, superglue used for filler and the etched doors glued into position. Here, I used the etched hinges. However, the flat barrels of the etched hinge were restored with plastic rod. One surface of the rod was sanded flat, cut to length and glued into position. The ZAP superglue is an instant bond, therefore no mistakes are allowed in positioning!



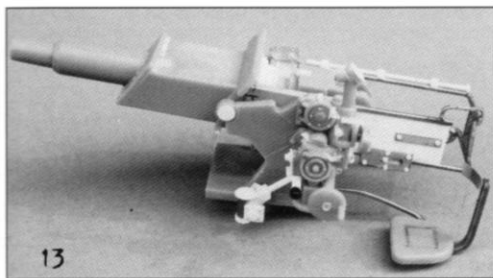
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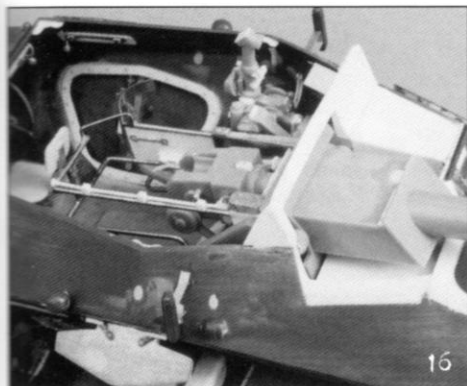
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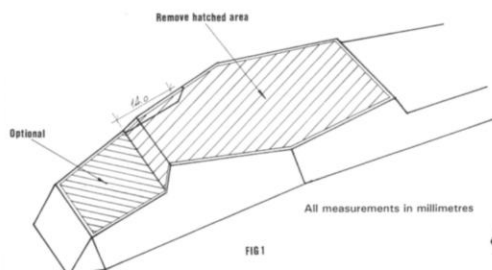
16

Impossible for me, therefore, I use solvent glue to attach the plastic to the etched brass. Follow this up with ZAP. Small quantities can be carried on a piece of fine wire.

From a single side elevation of a captured vehicle in North Africa, I made the right side cutouts and rebuilt to the new configuration in 15/1000 plastic card. See fig. 2 for measurements. The measurements are the maximum external and therefore allowances must be made for card thickness, your own tolerances, etc. With careful filling, wet & dry sanding, crisp, clean edges can be achieved. If you have gotten this far, the rest is a downhill run with little more than detailing!

### Floor it

The first major internal step is to produce a floor for the vehicle. Fortunately, the existing detail is at correct floor level and merely requires



CUT LINE

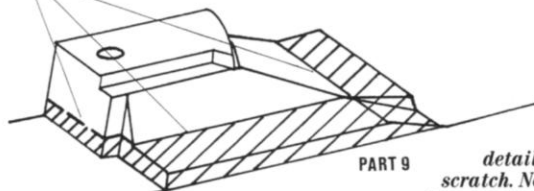
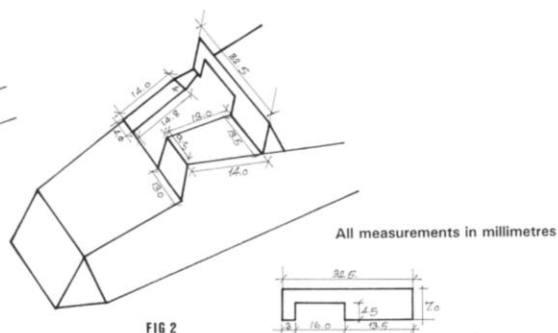
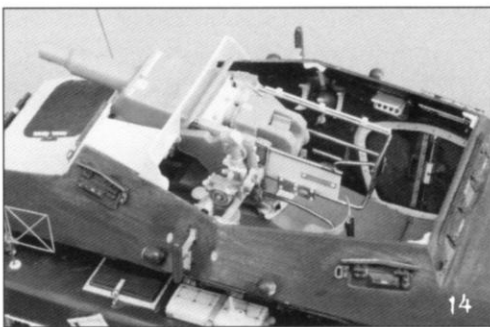


FIG 3

ished gun installed in the modified superstructure of the kit. The gun was positioned after all painting was complete. 17. I sprayed the first coat of Dunkelgrau in a Tamiya Acrylic. Composition was 80% XF-63 German Grey and 20% XF-8 Flat Blue. This photo shows the model just prior to applying a coat of Hannant's enamel RAL 8020. Also note the removal of the top rear engine louvers and their substitution with Eduard's etched brass.



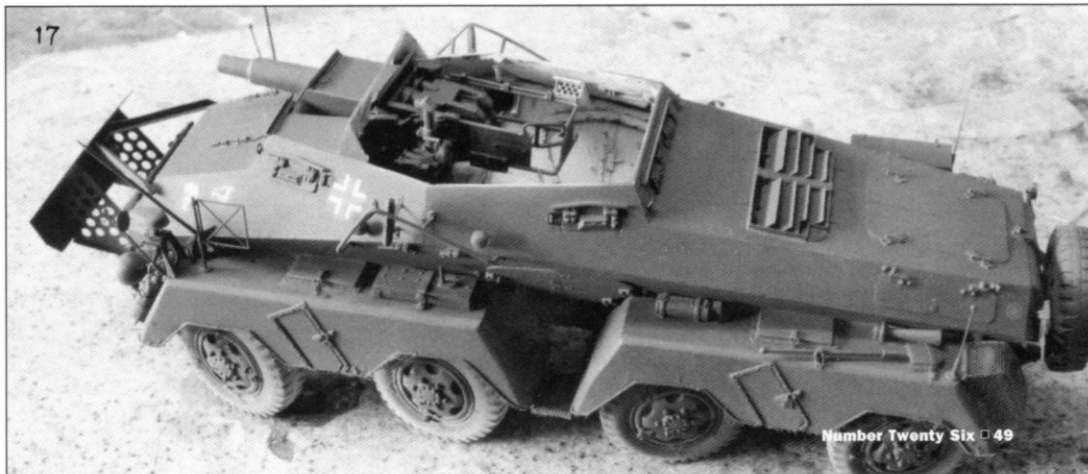
10-13. Considering that the Sd.Kfz 251/9 is a fairly recent kit, the gun is really very poorly detailed, with substantial inaccuracies and botched detail. Nuts & Bolts number 6, Sd.Kfz 251/9 offers all the details required to bring this rather poor gun up to scratch. Nothing too complicated, mostly strip, plastic, brass and aluminum. 14-16. This series shows the finished gun installed in the modified superstructure of the kit.



14



15



17



is at the correct height. If all is satisfactory, then only glue the platform to the floor. The locating pin under the gun cradle should be cut to only 2/3mm. It purely needs to locate the gun in its final position. The gun will be positioned after all painting is complete. If the original pin length was left, you would not be able to locate the gun into position. The only other major work was the removal of the top rear engine louvers and their substitution with Eduard's etched brass. The problem was one of lack of reference. The sole surviving vehicle in Germany does not have its original louvers. The near completion of this original 231 provided me with sufficient reference to complete the interior, although items such as the size and location of ammunition bins remains conjecture. For the interior, I used Aber's etched set, although even their ammo bins were too big and I made my own out of sheet aluminum. Fortunately, I had decided on an early 233 with the simplified unarmored visors. The late patterns are far more complicated. As there are six to make, I was grateful for the limited amount of work.

### Painting and finishing

Once all detailing was complete, I ended up with three separate components. The upper & lower hull, plus the gun. Until the interior was complete I could not glue the two hulls together. I therefore sprayed the interior with my usual acrylic white primer. Remember to mask off the surfaces to be glued together. Using diluted burnt sienna in oils, I did a fair amount of weathering. The floor is a mixture of matte dark red brown and matte black, dry brushed with Hannant's oily steel. Once I was reasonably contented with the interior, I glued the hulls together and made the necessary filling.

Despite the kit's age, the two parts of the hull are a remarkably good fit. Filling the interior with soft toilet paper, I sprayed the vehicle with the white primer and allowed 24 hours to cure.

As I continue to strive to improve my painting, I decided to attempt a new painting technique. Regular subscribers to this journal will appreciate my limited success with producing a more weathered appearance to my vehicles. I wanted to illustrate a Sd.Kfz 233 painted in Dunkelgrau (RAL7021), dispatched to North Africa in late 1942, with no particular regime of paint preparation and oversprayed with Braun (RAL 8020). Subsequently heavily weathered by sun, wind and sand. I continue to suffer an inability to randomly apply the paint chip technique. I thought I would attempt to recreate the loss of paint by literally removing the topcoat. The method is fairly simple. I sprayed the first coat of Dunkelgrau in a Tamiya Acrylic. Composition was 80% XF-63 German Grey and 20% XF-8 Flat Blue. After 24 hours I used a selection of Archer's wonderful dry prints. I then gave a light coat of acrylic satin varnish; this was to seal the dry prints. Next day I gave the model (after filling the fighting compartment with toilet paper for the third time!) a coat of Hannant's enamel RAL 8020. Allow a maximum of 24 hours for partial curing. I cut down a hog hair bristle brush to approximately 5mm. Using liberal quantities of enamel thinners, I painted (with a flat sable) corners and any other areas that suffered abrasion, etc. Using the bristle brush, I stabbed at the corners, raised detail, etc. As can be observed from the photos, the topcoat comes off in places and most importantly for me, randomly! Arguably too much, but it is a technique I will try and

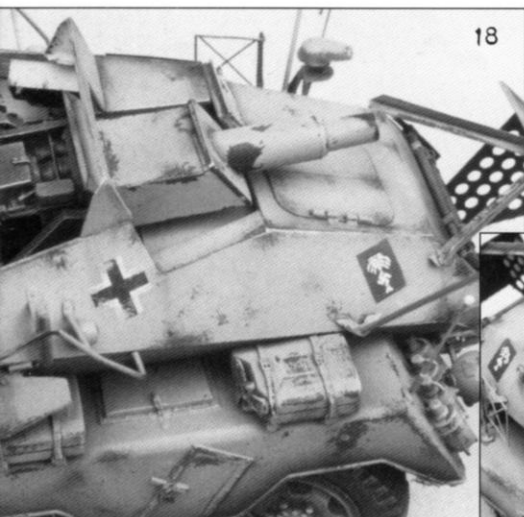
improve upon. Oh yes, try and remember where you put the dry prints, otherwise the beauty of these products will be wasted. After this process it was back to the standard dry brushing technique. I mixed up a Dunkelgrau in oils, and as opposed to the normal technique of lightening the raised detail, I darkened. I finally finished off with liberal applications of randomly applied pastel chalks.

The gun was finished in my traditional approach of light highlights and pastel chalk shadows. Corners and edges were lightly dry brushed with Tamiya's Paint Marker chrome silver (X11). Using a small amount of epoxy glue applied to the gun platform, I inserted the gun, positioned it and allowed it to dry.

The vehicle represents a Sd.Kfz 233 from the 33rd Reconnaissance Battalion, 15th Panzer Division. I am unsure whether the 15th was equipped with these vehicles; certainly the 10th Panzer was and by this rather tenuous thread hangs my theory!

An interesting vehicle for my collection and one that did not require any specialist techniques or modeling equipment. ☺

—A.J. Greenland



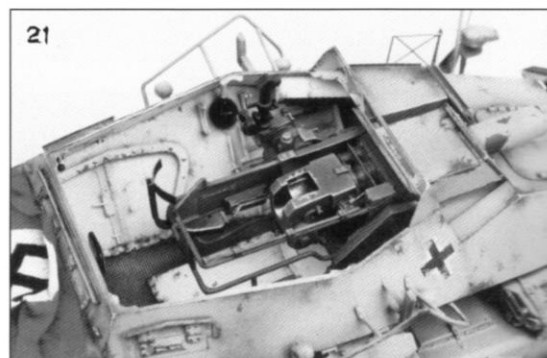
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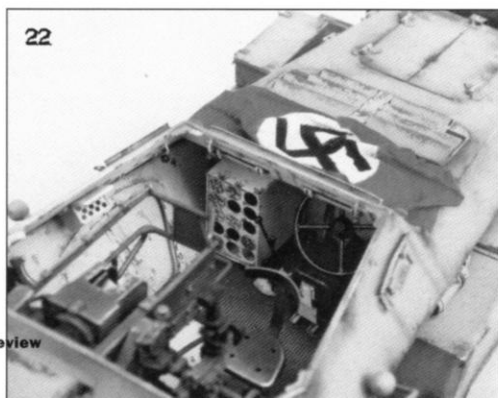


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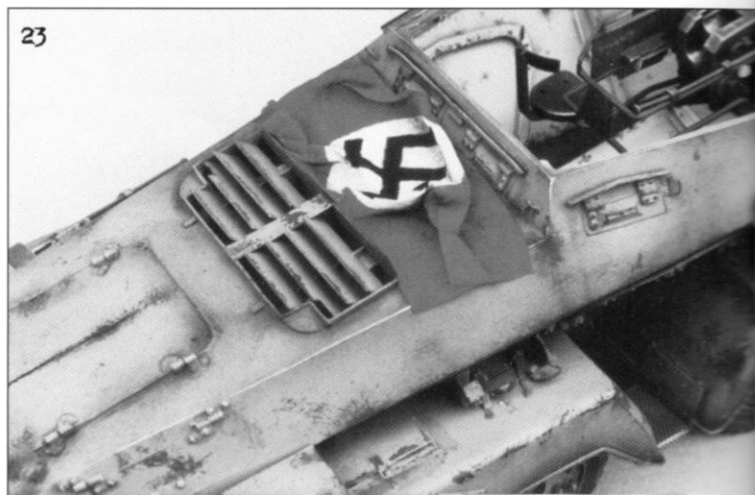


21

18-23. The finished model. The interior was weathered using diluted burnt sienna in oils. The floor is a mixture of matte dark red brown and matte black, dry brushed with Hannant's oily steel. The interior was masked with soft toilet paper, while the exterior was painted and weathered. Portions of the final topcoat were removed using liberal quantities of enamel thinners. Using a hog hair bristle brush cut down to approximately 5mm, I stabbed at the corners, raised detail, etc. The model was marked using a selection of Archer's wonderful dry prints. As opposed to the normal technique of lightening the raised detail when dry brushing, I darkened, using Dunkelgrau mixed up in oils. I finally finished off with liberal applications of randomly applied pastel chalks.

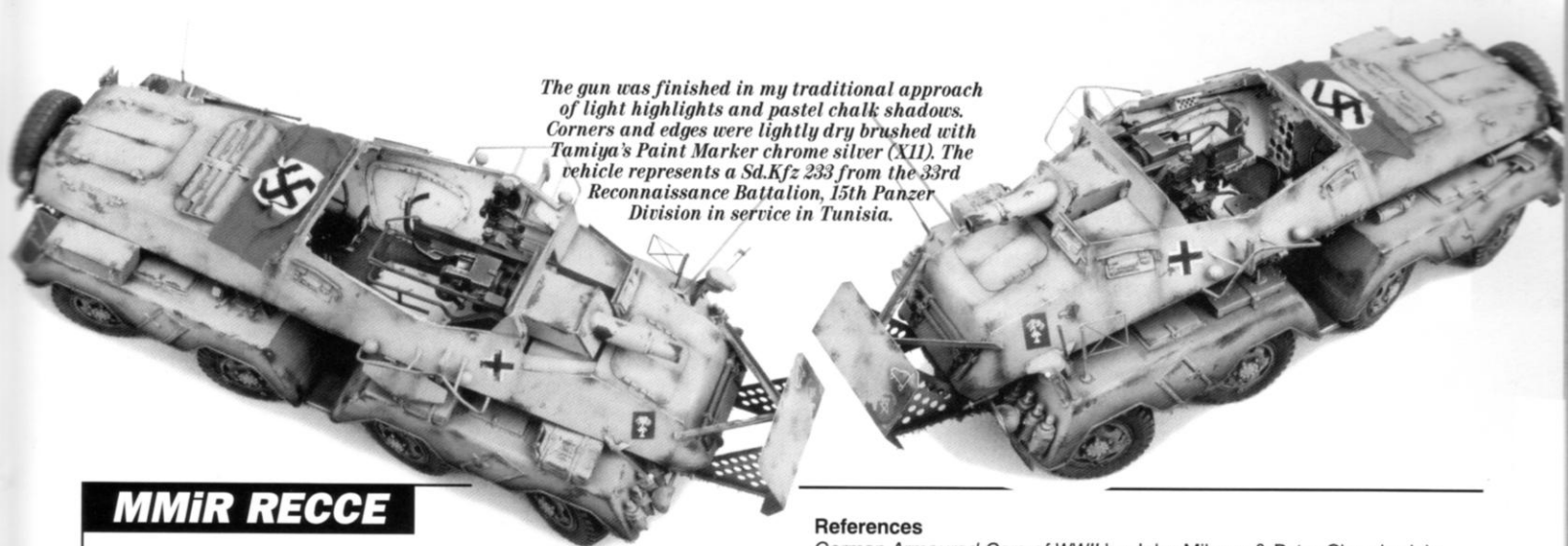


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23





The gun was finished in my traditional approach of light highlights and pastel chalk shadows. Corners and edges were lightly dry brushed with Tamiya's Paint Marker chrome silver (X11). The vehicle represents a Sd.Kfz 233 from the 33rd Reconnaissance Battalion, 15th Panzer Division in service in Tunisia.

## MMIR RECCE

Tamiya Sd.Kfz231/232. Kit number 35036.  
Tamiya Sd.Kfz 251/9 Ausf D. Kit number 35147.  
Eduard Sd.Kfz 232 etched set. Kit number 35060.  
Aber Sd.Kfz 250/8 etched set. Kit number 35074.

### References

*German Armoured Cars of WWII* by John Milsom & Peter Chamberlain. Arms & Armour Press 1974

Nuts & Bolts, Volume 6 *Kanonenwagen (Sd.Kfz 251/9)* by Detlev Terlisten. 1997

*Der Deutsche Panzer und Militärfahrzeuge an der Front Bildband* by Tomioka Yoshikatsu. Dai Nippon Kaiga.

*Duske Greenland Archive.*

THE  
REAL  
DEAL



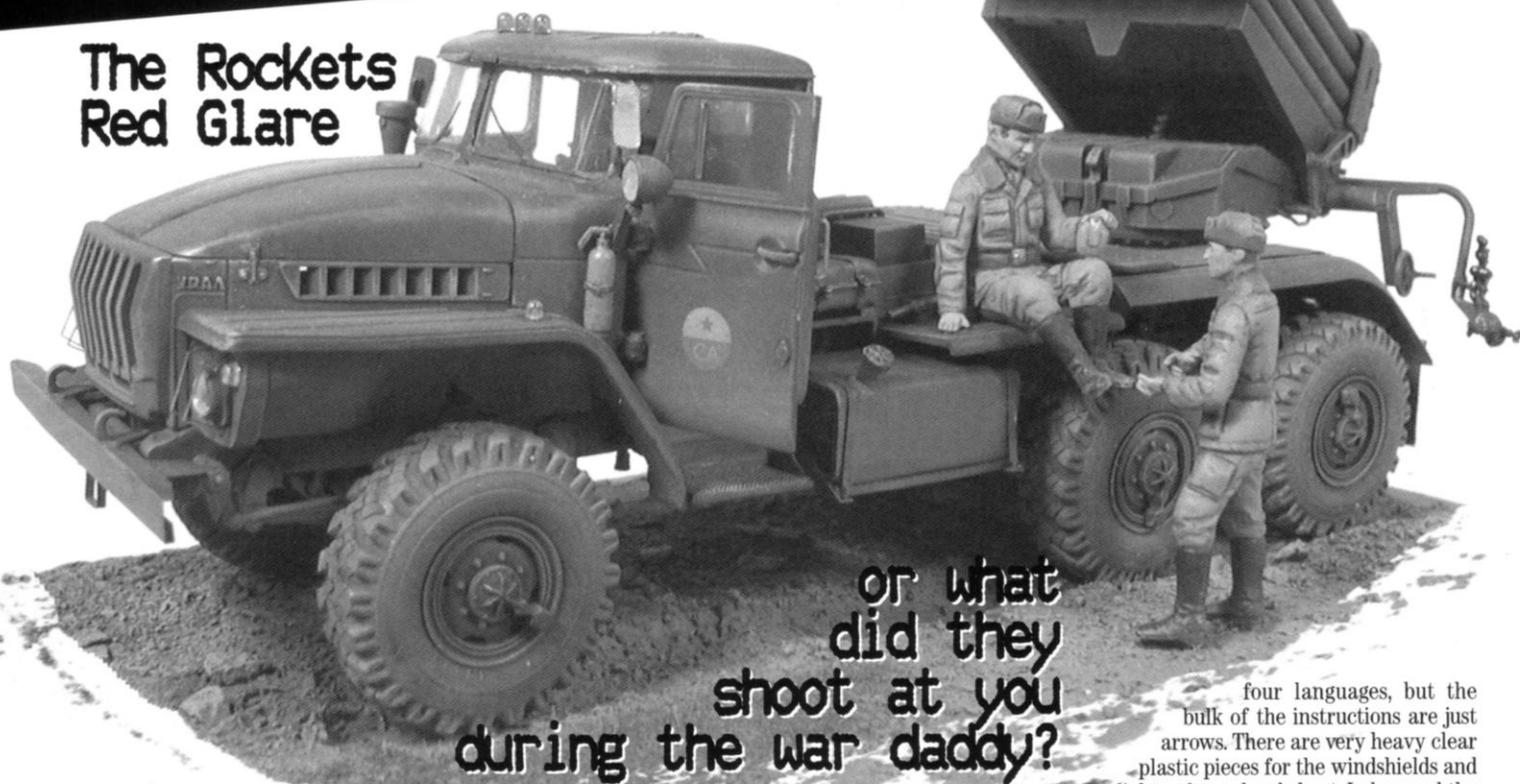
These photos depict an early conversion of the vehicle. Note the early, unarmored visors. The vehicles illustrated still retain many of the attributes of the original armored car. The Sd.Kfz 233 was typically assigned to a panzer division's reconnaissance battalion.





# Hail Yes

## The Rockets Red Glare



or what  
did they  
shoot at you  
during the war daddy?

**T**he BM-21 GRAD (Russian for Hail) is a direct descendent of the BM-13 of World War II fame. It was designed to replace a variety of different calibers of rockets that had evolved during WWII and after. Development began in 1957 by the State Research Enterprise (SRE) Splav. It was first fielded in 1963 when it went into service with Russian forces and was assigned to both the Soviet Motorized Rifle Division and Tank Divisions. Each division had a Multiple Rocket Launcher (MRL) Battalion consisting of three batteries of six BM-21, for a total of 18, plus a couple of the older BM-13's, that were used as trainers. It first saw combat during the fighting with the Chinese on Damanskiy Island in the Ussuri River area in the late 1960's.

The BM-21 was originally mounted on the URAL 375D truck. In the 1980's an improved version mounted on the URAL 4320 truck was introduced, which is the subject of this kit. The URAL 4320 is produced by the Uralsky Motor Plant and is powered by the 176 kW diesel engine with 180 hp. The cross-country capability of this truck is improved by the large cross-country tires, which have a centralized tire pressure control system.

The launcher consists of forty tubes organized into four rows of ten each. Electrical motors provide the control and it uses an artillery-sighting device. The basic rocket used is the 9M22 122mm type with a MRV fuse. The warhead contains 6.4 kg

of explosive and has a range of 18.3 kilometers. There are a number of types of warheads, including gas and antipersonnel mines. After being on the receiving end of the 122mm HE rocket in Vietnam on a number of occasions from the 107th Rocket Launcher Company, I can personally attest to their lethality and physiological effect. I could not even imagine what it would be like having a whole battery of these firing at you.

### The OMEGA-K OR ICM Kit?

I am making a big assumption that this is the same kit that is available from ICM now. Although I have not seen the ICM kit open, the Eduard photo-etch set (which is for the ICM kit) labels kit parts in the instructions that match the Omega-K part numbers. At any rate, the Omega-K kit consists of seven injected plastic sprues in dark green plastic. The plastic is of the same type I have become use to from Eastern Europe. It is a soft plastic and hard to clean up because it fuzzes when scraped. The molding is what I would classify as very heavy handed and there are some serious release marks all over the kit, most of which need to be removed or filled since most of them show. The detail for the most part is also poor. The tires are solid rubber and are also poorly molded, unlike other more recent offerings from SKIF, which have been hollow. The instructions are in a 14-page booklet format and at first look pretty complete, but after a closer look, they leave a lot to be desired. The introduction is in

four languages, but the bulk of the instructions are just arrows. There are very heavy clear plastic pieces for the windshields and lights, plus a decal sheet. I also used the new Eduard photo-etch set for this kit, which consists of three photo-etch sheets, plus the film for the dash instruments.

### Hail Me a Cab

I first went through the instructions and circled all the areas where there are photo-etch choices. I then began construction with the cab. The floor piece (A5) had some mold release points in the floorboard. However, there are photo-etch parts that cover the worst of them. For the rest I used Squadron Green Putty. I used the photo-etch pedals and the kit's gearshift. The seats were cleaned up and glued on. I then built the running boards (C6/7) using the photo-etch parts and glued them to the floor piece. I cut off the raised detail on the instrument panel (C27) and glued it to the floor piece. I left the new photo-etch and film instrument panel off till after painting the cab interior. I glued on the hold bar on the passenger side and tried to glue on the steering wheel column (C12), but had some difficulty. Either I was doing it wrong or the column is too short. Anyway, to make the steering wheel extend above the seat and away from the dashboard, I had to add some brass wire to extend the steering wheel column. I then glued the firewall onto the cab floor. The rear cab piece (A2) had some really nasty mold release points that had to be filled before gluing it onto the cab floor piece.

I glued the front fenders to the engine compartment side-pieces C32 and C33. Once set, I glued on the grill (A4) watching for alignment. After letting



this dry, I glued the whole thing to the cab assembly.

## ENGINE OR NOT

The truck's hood is supposed to be workable with some very heavy-duty hinges connecting the hood to the cab. I was not sure I wanted to show the engine, so I thought I would give it a shot and see what it looked like. I had some trouble getting the hood to sit flat on the side pieces until I cut off lips that are supposed to keep the hood aligned on parts C32 and C33. After playing with the hinges, I finally gave up, since they were too heavy and caused the hood to sit too far forward. I finally just glued the hood on.

I then started on the engine. Since by this time I had decided not to leave the engine compartment open I did not take a lot of time assembling it. There are a number of pieces to the engine and when complete, it looks pretty good. The only thing I changed from the kit was I used the photo-etch fan blade. There is also some really nice photo-etch radiator screens, which do show through the grill that I used. If you wanted to really make it look good, you could add fan belts, since all the pulleys are furnished.

## PLEASE KEEP THE SUSPENSION

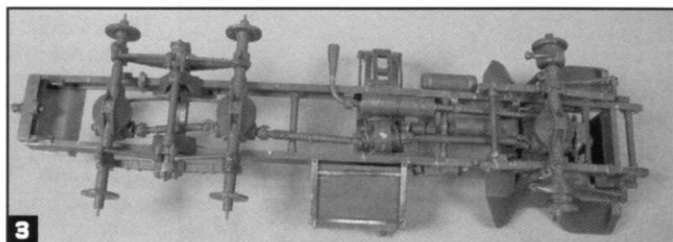
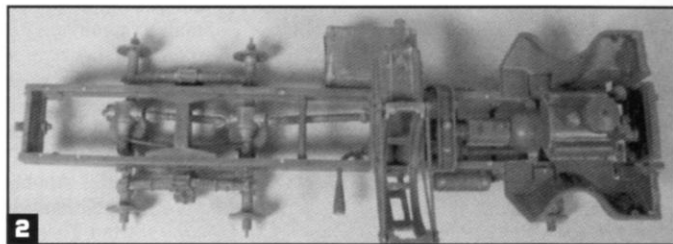
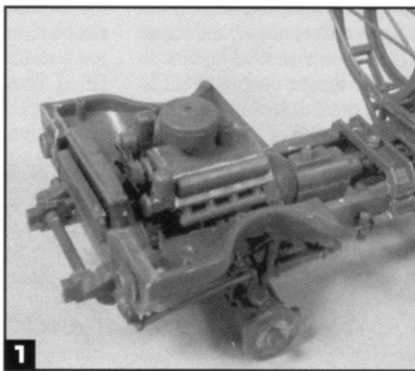
I then moved to the truck frame. This is another little project by itself. I first glued all the connecting pieces on one side of the main frame (C16) and then glued on the other side (C31). One difficulty I had was with one of the braces (B44) actually has a top and bottom, but the instructions don't show which way it goes. I test fitted the engine only to discover I had mounted the brace upside down since the rear of the engine rests on it. After turning it over, I tested the engine mount again and found it still would not sit right unless I cut a groove in this cross brace. I cut the bands off the tank (B49) and replaced them with photo-etch ones.

The engine was then mounted and the complex exhaust system was constructed. I cannot give any advice here, except experiment. The instructions are really poor for this section. The rack for the spare tire is another difficult area since the instructions are definitely not complete as far as placement goes. I used the photo-etch straps for the auxiliary fuel tank (at least that's what it look like), B47 and then glued it on.

I then proceeded to attach the axles and all the connecting drive shafts and rods. I started in the front and worked backwards which seemed to work. The only difficulty I ran into were the mounting pieces for the rear axle (E9). I really think that Omega-K messed these up. The halves don't match, so I cut off some excess to allow the connecting rods (B17) to fit. The mounting pieces

1. The engine is pretty detailed. I added the fan belt and radiator grills from Eduard's photo-etch set. 2. The chassis is composed of a large number of poor fitting parts. 3. This is the bottom of the chassis. The large fuel tank was mounted only after all the photo-etch mounts were attached to it. 4. The engine compartment painted and ready for the cab to be glued on. I dry brushed silver on the engine. 5. The box assembly that goes between the cab and launcher has some very thick pieces, which require serious filling. Also, when attaching to the frame more cutting is needed to make it sit flat. 6. The replacement launcher tubes were cut using a miter box and razor saw. 7. The jig was built from scrap sheet styrene. It should have been deep enough for all four

rows. The paper is used to divide the tubes, which in real life have metal rods running between them. 8. The completed launch tubes. The kit parts for connecting the tubes together were used but the rear section require a lot of filling because of a very poor fit. A combination of brass and aluminum tubing was used, but I recommend using all aluminum since it is cheaper and easier to cut. 9. For those who want to go with the kit tubes, you have to correct some nasty mold lines between the halves once cemented together.

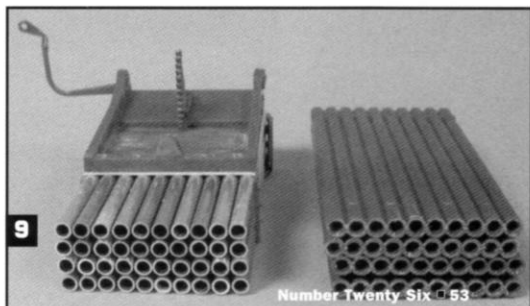
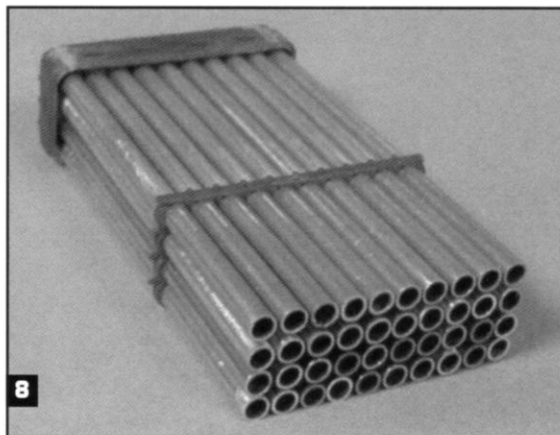
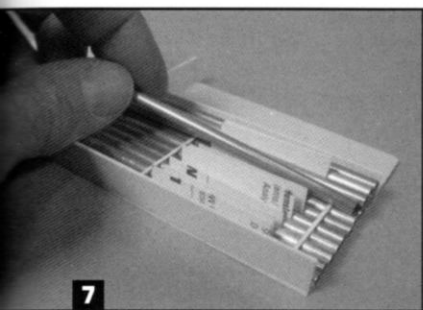
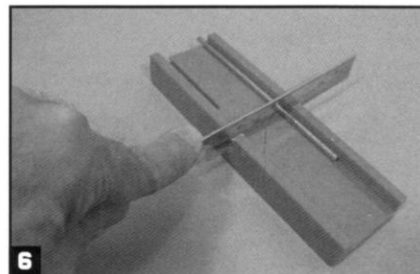
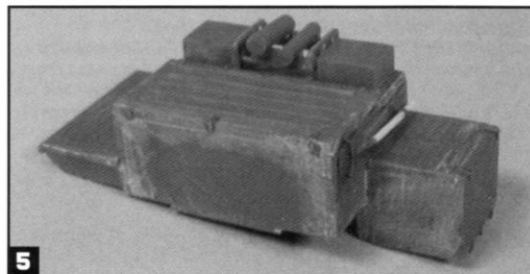
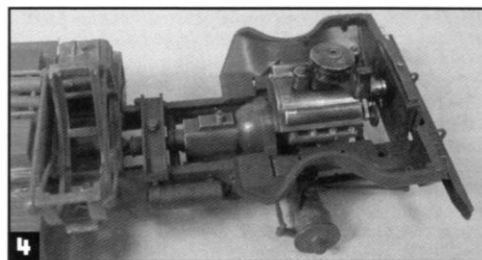


(B15) for the center axles were okay.

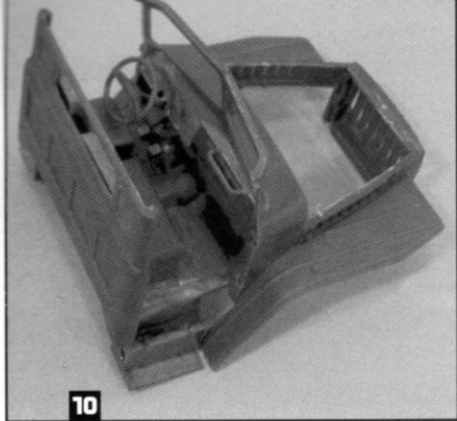
I glued on the two bottom engine compartment pieces (C25 and C26). I then assembled the fuel tank (A17-19). I cut off the straps and used the photo-etch ones. I had decided not to put the photo-etch mounting braces (7 and 8) on until I assembled them on the tank and I am glad I didn't. It would have been almost impossible to get this whole thing together, if they were already glued on the frame. Additionally, the mounting braces do not go on the frame in the same place as the kit ones, so they would not have been right anyway.

## LAUNCHER YOUR CHOICE

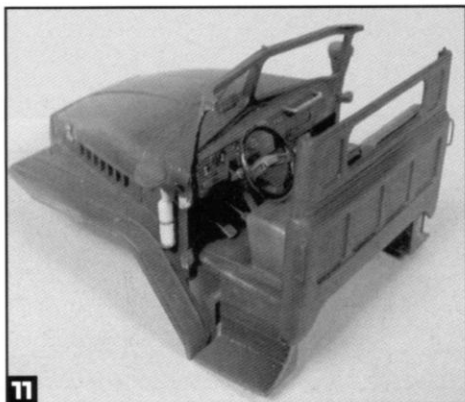
The launcher was the next item and at first glance the tubes looked okay, but read on. I assembled the launch tube halves together first. You have to be very careful here because the parts (K1) are not all the same and only certain pairs work together. Watch out for the pins and be sure they mate up to each other. Anyway, once I glued them together I tried to clean them up, but the ends just do not mate well. The tubes are way too thick, which can be thinned down, but the joints are too big to really fix. After much soul searching, I decided not to use them. I replaced them with aluminum and brass tubing I bought at my local hobby store. The reason I used







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10. The cab is pretty straightforward but there are serious release holes that need to be filled. I filed the instruments off to allow the use of the photo-etch dash. 11. The cab interior has been painted and the dash panel has been installed. 12. The cab roof was added and the cab glued to the chassis. The chassis is now ready for the final paint. 13. The kit is almost ready for painting. The major components are not glued but just placed together to check the fit. 14. Another view of the model ready for painting. Notice the fire extinguisher. It does not come with the kit but Eduard supplies the photo-etch mount for it. The extinguisher came from my spare parts box. 15. The completed model. The kit decals disintegrated when I tried to use them so I replaced them with some spares from another kit. The door emblems are for the Group of Soviet Forces Germany. 16. The amber warning lights are actually from an accessory set that ROCO makes for their 1/87 kits. 17. This rear view shows the caps for the individual launch tubes that come with the Eduard set. The taillights are red MV lenses. 18. A bird's eye view of the completed vignette. The two figures are from the DML Motorized Rifle set which have been "de-infantried," if that's a word. 19. The completed model sets a quiet time for a couple of Russian soldiers while waiting for the next firing mission. The rear view mirrors were covered with Model Master Ultra-Bright Krome Foil.

12. The box assembly that goes between the launcher and rear fenders and the spare tire housing is especially bad. One part just did not fit and that was H21. Once this box assembly is complete it does not sit on the truck frame correctly. I had to cut deeper notches in the box to get it to sit right. I only had a few shots of BM-21 from the to magazine articles listed below that help. I really wish I had more. You really need extra references because the kit instructions are not even close to complete.

The piece (H25) that is the main mounting piece for the launcher/fender assembly is not easy either. I believe the two braces (N3 and N4) are backwards, so I glued N4 in the front and N3 in the rear. H15, which goes on the rear of the truck frame, has some humongous release holes that need to be filled. They actually look like they were there on purpose, but the photos I have showed this piece flat without any holes.

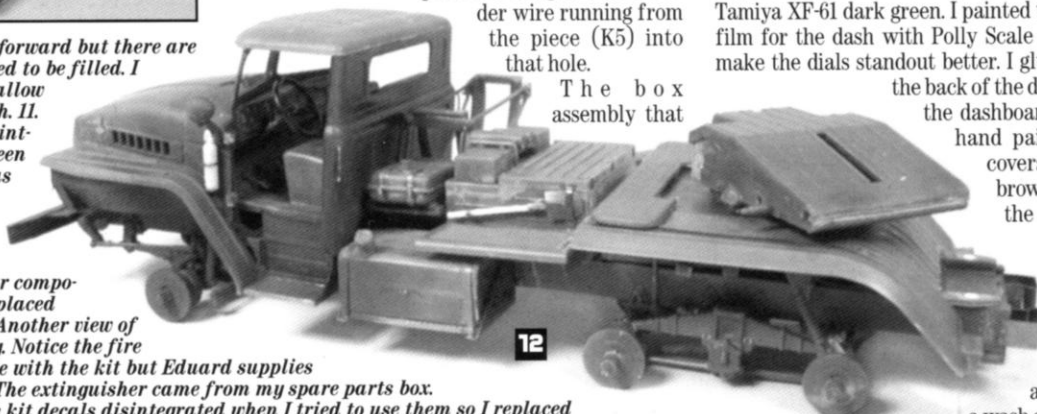
**Let's Paint**

I left the kit in three basic pieces for the first stage of painting. The cab, launcher, and frame with the rear fender assembly attached. I first washed everything with warm soapy water. Next I sprayed the engine compartment and cab interior with Tamiya XF-1 flat black. I then lightly sprayed the cab interior, the dash panel, which I had stuck on an index card with masking tape, and around the engine compartment, but not the engine, with Tamiya XF-61 dark green. I painted the back of the film for the dash with Polly Scale white paint to make the dials stand out better. I glued the film to the back of the dash and then to the dashboard in the cab. I hand painted the seat covers with Vallejo brown leather and the steering wheel and gearshift knob with Tamiya X-1 gloss black. I gave both the engine and cab interior a wash of thinned ivory black oil paint. I then dry brushed the interior with a mixture of titanium white, sap green, and burnt sienna oil paint. The engine, floorboard, and pedals were dry brushed with Rub-n-Buff silver. I then glued the cab top on and the cab to the front part of the chassis.

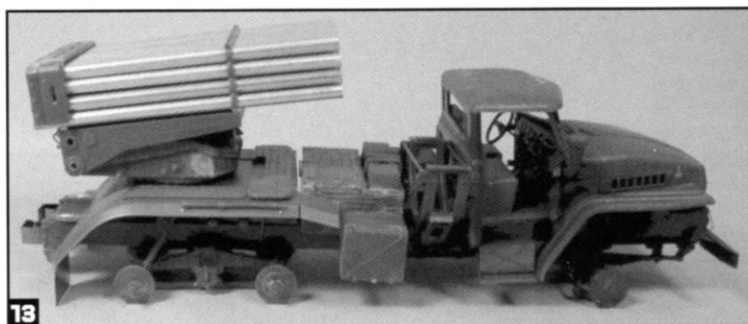
## Let's Paint

After stuffing the cab with cotton I painted the rest of the vehicle using the same method, first with Tamiya XF-1 black, then lightly spraying with XF-61 dark green. I then lightly sprayed all the top surfaces with a mix of Tamiya XF-61 dark green and XF-60 dark yellow to show some slight weathering.

The box assembly that



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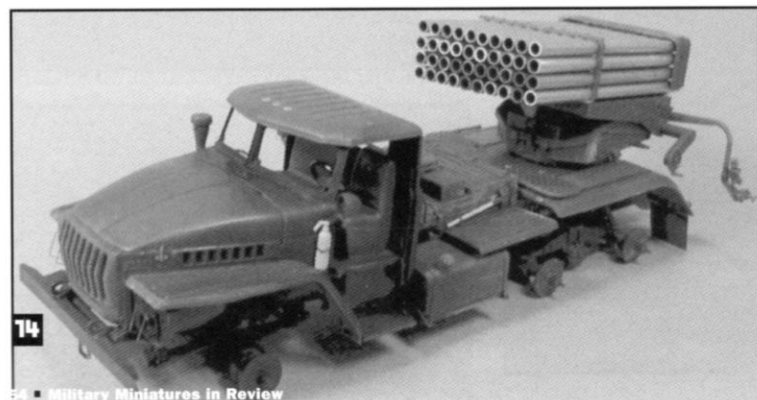


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Now came the decals. The sheet that came with the kit looked good and had a number of options, but after carefully cutting out two of the door markings for Groups of Soviet Forces and putting them in water they disintegrated. Fortunately, I had a number of decals left over from other kits and used them instead. The instructions only show where a couple of the decals go and the rest are left up to the modeler to figure out.

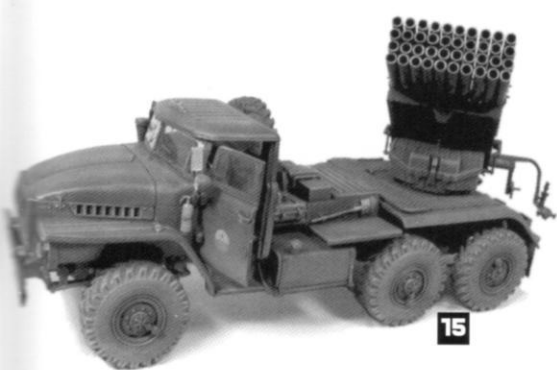
I painted the exhaust system with Polly Scale rust and the shovel handle with Polly Scale light tan and the blade with Vallejo dark gray silver. The fire extinguisher was first painted with white paint, then enamel orange.

I then gave the whole vehicle a wash of black oil paint thinned to about 20% paint, 80% thinner. I then pin washed with 50/50 black/burnt umber oil all the bolts and seams I wanted filled. I sprayed the under side



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in a very light coat of Polly Scale dirt. I also painted the tires with the dirt and then with Tamiya flat black for the center. After drying, I assembled the wheel rims in the tires by snapping them in. They fit so snugly that no glue was needed.

After looking at the vehicle, I decided it was too flat, so I gave it a light coat of 50/50 clear gloss/flat paint to give it a very light sheen. Next came the windows. I knew they were going to be a problem and I was right. The cab rear window went in okay but the front ones were a terrible fit. I did the best I could, but finally gave up and made new ones out of clear acetate. I finished the truck by dry brushing with a mixture of sap green, titanium white

and yellow ochre oil paints.

The last step was to paint the headlights and spotlight interior with silver, then glue the clear lenses in. I also added red MV taillights and ROCO HO emergency orange lights for the cab top and fenders. These orange lights look great even though they are for the 1/87-scale trucks.

### Which Figures to Use?

After a lot of searching for some correct figures that would be appropriate, I finally gave up and used the DML Soviet Motor Rifle

Troops. ICM has now released the BM-21 kit with figures but after seeing the box art I did not really like the poses of the figures and I wasn't going to buy the kit for just the figures. I decided to define the figures as much as possible, so I used two of the figures that did not have any web gear on. I assembled them without any weapons for a casual pose around the BM-21. I then sprayed them with Polly Scale tan to check for any seams and to give the skin a base coat. I painted their hands and faces with oil paints and their uniforms with Vallejo paints.

For the base I used a small wooden plaque which I stained the edges of first. I then mixed Celluclay with white glue and black, red-brown, and sand acrylic paints. After applying it to the base, I mixed in some small gravel and pebbles. I also put some static grass on it and pressed everything in. Once dry I airbrushed the whole thing with Polly Scale dirt and some areas with Polly Scale mud. I gave it a wash of burnt umber oil since it was not as dark as I wanted. I then dry brushed with a mixture of oil paints to help pick out the highpoints.

### What do I think?

This is one tough kit to build. The instructions are not great and tend to leave off parts that are on the other side of the drawing, in other words paired items that are the same on both sides. Additionally, similar but not identical pieces have the same sprue number, which really gets confusing. As mentioned, the molding is rather poor and cleaning up all the mold release holes was really difficult. The pieces are very thick for some reason and the launch tubes are totally unacceptable to me.

Still it is a lot better than the NPO kit that came out a couple of years ago, which I bought but fortunately resold to someone else after looking at it.

—Jim Hensley

## MMIR RECCE

OMEGA-K/ICM BM-21 GRAD. Kit number ICM35381. Suggested retail price \$25.98.

Eduard BM-21 GRAD. Kit number 35-294. Kit graciously provided by the manufacturer. Suggested retail price \$22.99.

Accessory items: Brass/Aluminum Tubing 5/32" diameter x14; DML Soviet Motor Rifle Troops, #3008; ROCO Amber Light Set HO #464 and MV Lens #LS200 red lenses.

### References

*Soviet/Russian Armor and Artillery Design Practices: 1945 to Present*, Zaloga, Steven J., Hull, Andrew W., Markov, David R. ISBN 1-892848-01-5, Darlington Productions, Darlington, Maryland 1999. Useful for history but only a few photos.

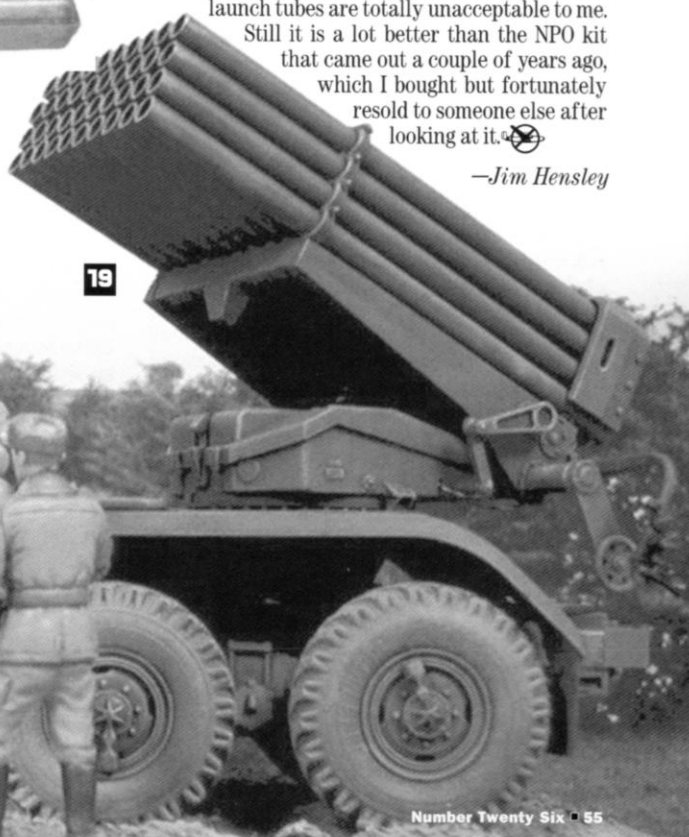
*TankMaster magazine*, Article on NAPO kit, (all in Russian), Issue 1/98, Good photos of the real thing, otherwise not of much use unless you read Russian.

*Steelmaster* No 34, The BM-21

GRAD, Receveur, Christian, Paris France August-September 1999. This is the same kit I built, plus some good photos of a BM-21.



18



19



# Flamm-Plastic!

The hot  
Flammpanzer II  
from Alan



**Y**ou may think the Flamingo came about as an answer to the question, "What do we do with these obsolete Panzer II's?" In reality, the Waffenamts requested this

little flame broiler as early as 1939 in anticipation of dealing with enemy bunkers and other fortifications. Initially, 112 were constructed in direct production, with an additional 43 being converted from D & E chassis between January 1940 and March 1942. Armament consisted of a turret mounted MG34 and two remote controlled mini-turrets, each housing a Flammenwerfer-Anlagen. Fuel for the 'werfers' was stored internally, while the out-board mounted tanks contained the compressed nitrogen to propel the deadly napalm-like mixture. Range is believed to be only 35 meters, but with enough fuel for approximately 80 short bursts. Smokin!

## Das kit

I got my first look at a Flamingo in *Tony Greenland's Panzer Modelling Masterclass*, which is the ADV/Azimut resin kit of the direct production Ausf. A and B series. I liked the looks of it immediately. So, when Alan of St. Petersburg, Russia released its own Flammpanzer II, I was all over it! This kit represents a converted D chassis. My first impression was, "Man, the box is paper thin!" Sure enough, some of the parts were pre-busted for me. Mostly, it was the very delicate open guide horns of the individual

track links.

More on these later.

A further scan of the sprues quickly revealed that a Tamiya On-Vehicle Equipment set would be needed to save the day.

## Cut, grind and fill

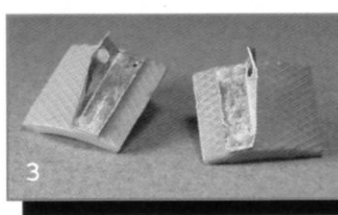
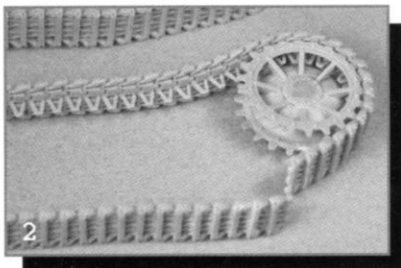
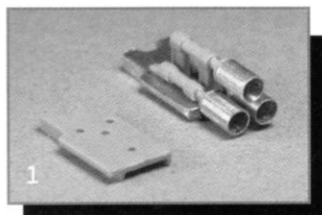
Steps 1 & 2 deal with basic chassis buildup. Several sections of the fenders and some bracing must be removed, and you'll want to do this first. The plastic is soft, and with a slow, steady hand, the offending parts can be cleanly shaved off. The best tool for this is a spanking new chisel type X-acto blade. The more care you take here, the better off you'll be. Don't worry too much about the missing fender detail when you remove the front braces, because the flamm tanks will cover the area. As for the instructions to open holes on the fenders, ignore them. One thing you can't ignore however, is the rear armor plate. The folks at Alan thought it would be cool to fill out the detail side with ejector pin marks. I initially thought that the muffler and other parts would cover them up. I was wrong. Save yourself some time and build a new rear plate from plastic card. Relocate a few details from the kit part and you're ready to move on.

A few other tips about the upper hull: the hull hatches are

molded with a very tight tolerance to their openings. If any plastic cement wicks into the joints (and it will), the two surfaces will fuse together and the whole point of having a separate molded hatch is lost. The edges of the hatches need some light sanding and lots of test fitting. Once again, I discovered almost too late that I could glue plastic strip to the underside of the hatches and then to the inner hull to keep glue away from the joints, which solves this problem. The rear hatches also need some surface sanding to sit down into the hull properly. The two main engine hatches come molded on, so I used the 'dull' side of an X-acto blade to scribe the joints a bit deeper for better definition. Don't slip!

## Wheelie bars

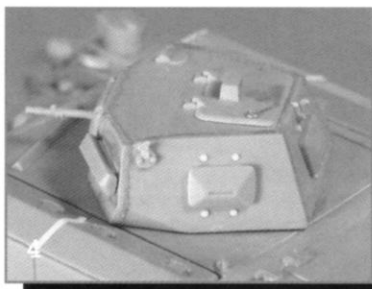
While I appreciate separate suspension arms as much as the next guy, I must say that what we have here is a bit fiddly. The arms have only a small foothold to attach themselves to the hull and the fit is loose. The moral? Use plastic cement and check the alignment often. With the help of a few shims, you can rest the hull on a flat surface to help with this. Once the suspension arms are attached, the theme of poor tolerance continues. Attachment of the wheels again requires careful alignment. Chin up though, this one is easy. Slide a metal ruler right down the center of the wheels and they will line up nicely. The only thing you'll have to watch now is the camber.



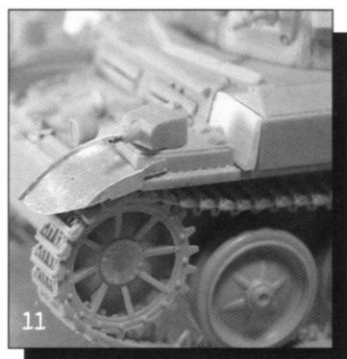
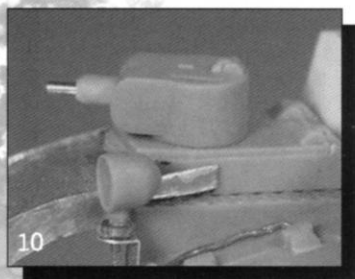
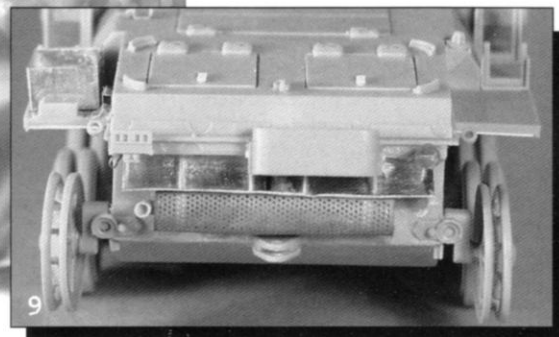
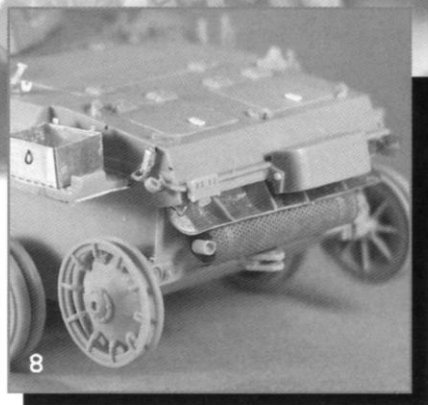
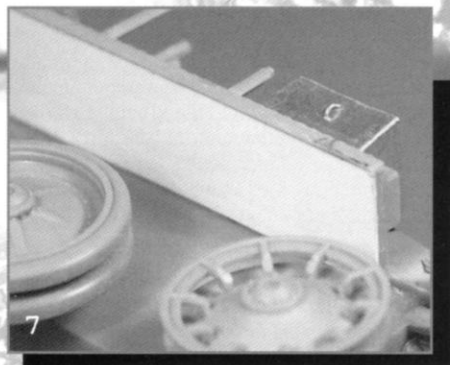
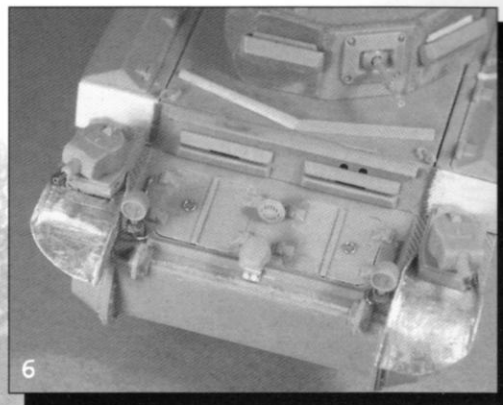
1. The majority of smoke dischargers were scrapped. Foil copies were done from the bases, and the tubes were replaced with metal. 2. Completed tracks removed for painting, note the delicate open guide horns. 3. Aluminum foil braces and bolts were added.



4. The turret is the area most lacking in the kit. The basic turret shape is here, but it needs some work. Most noticeably missing are the weld seams and these should be added first. 5. Weak



attachment of suspension arms. 6. As I began to add the sheet metal parts, the first items I tackled were the front fenders. The kit parts are too long and incorrectly shaped at the rear. They are still useful as a reference. 7. The bottoms of the fenders were blocked off with sheet styrene. 8. Convoy light and antenna base from Tamiya on-vehicle equipment set. Scratch built box without lid for easier painting. Aber clamps were left workable so that the tools could be added after painting. 9. The kit's exhaust deflector had unfortunate knock-out marks, so it was scratch built from foil. Kit provided etched muffler screen is quite usable. 10, 11. Foil headlamp bracket with fine solder wiring. Flame turret nozzles were replaced with fine metal tubing.



## Troublesome turret

This is the area most lacking in the kit. The basic turret shape is here, but it needs some work. Most noticeably missing are the weld seams and these should be added first. Check your reference photos and keep in mind, this is a thinly armored vehicle. I created the welds by scribing lines first, then adding red putty rolled into long, thin sections. Bead detail was added after the putty dried. The next items are the two movable visors on either side of the MG34. They protrude too far from the turret. Simply cut away the oversized base until it is flush with the "movable" part of the visor. Before attaching these, fill the large indentations in the turret and ignore the kit's alignment for the visors. They should run parallel to the ground, not to the turret top.

A few other issues involving the turret include the periscope guard that is too tall and the hatch that is too far back. If you model the hatch open, be warned that, while a periscope is included, the inner hatch hardware is nonexistent and reference photos are hard to come by.

## Foiled again

As I began to add the sheet metal parts, it was obvious most of the kit parts would find the trash can. The first items I tackled were the front fenders. The kit parts are too long and incorrectly shaped at the rear. They are still useful though, so don't toss 'em just yet. I used the parts to make alu-

minum foil copies with a technique I call 'burnishing.' Simply put, this involves wrapping a thin piece of foil around the original and burnishing or rubbing the two together until they are one. The best tool I've found for this is custom made from either a dowel rod. The wood glides nicely over the foil and you can trim the end to suit each new

task. Before you begin, remove any molded-on surface detail that cannot be realistically copied. To remove the foil copy from the original, I use sandpaper and small files to grind away the overlap excess. You may have to gently drop the two on to a counter top to pop them apart. Once the fenders were copied, they required lots of trimming, cutting, and gluing to achieve the proper shape. Too much to go into here, but I suggest having a good look at Tom Jentz's *Panzer Truppen 1*. Other details done in foil include the left rear stowage box, headlamp brackets, rear fender braces, and exhaust deflector.

## Back to the front

Both the front and rear of this bugger needed considerable attention. Work on the front began with the addition of a weld seam for the front armor plate. Next, I used plastic card for the two plate extensions that provided the only real armor protection for the outboard nitrogen tanks. Because the kit omits them, you'll have to add them plus their weld seams. Alan also took some shortcuts and simplified the headlamp mounts and Notek mount. These were constructed from aluminum and brass. Wiring for the headlamps was

added with soft wire solder. The Notek and horn are from the Tamiya set. Also, bolt heads were added to the front towing hooks, Notek base and headlamp brackets. To finish off the front, I replaced the flame turret nozzles with miniature metal tubing. As I mentioned before, forget about the kit supplied rear armor plate and go with some plastic card. If you've come this far, then the exhaust deflector probably won't satisfy you either. I scratch built it with a combination of aluminum foil and plastic card. Rely on the kit part for size and curvature. I also rebuilt the muffler in foil, but I realized it wasn't necessary once the kit-supplied photo etched screen was added. Save yourself more time and simply drill out the kit part's muffler tip, then fill and sand the other end. Bolt detail was added to the rear smoke discharger brackets and the bottom was hollowed out and detailed. The rear was finished off with a Tamiya convoy light and a right hand taillight from the spares box, plus the appropriate wiring.

## Back-tracking

I really like the individual track Alan provided. The open guide horns are very delicate, clean up is minimal and they give you plenty of extras. This last part is fortunate, because many of the links found around the outer portions of the sprues are very poorly molded, while others had broken guide horns. Use the links from the middle of the sprues first. I began construction of the tracks once the road wheels and idler were firmly dried in place. The drive sprockets were left loose. My favorite method is building up entire runs or sides all at once. The fewer places you have to try to join the tracks, the better. I always shoot for one. Once I had an entire side built up, I began to work it onto the suspension and temporarily over the drive sprocket. You'll need to take care not to accidentally glue the track to the sprocket, but this will produce the best results later on. There's nothing worse than a track floating over the sprocket. Even after the tracks dry, you'll be able to remove them for painting. Leaving one unglued joint and the sprocket free will allow this. At this point, I painted the tracks. I



think I have finally stumbled upon a method of painting all-steel tracks that makes me happy (for the moment). My typical method had been to start out with a rust color and go over that with pencil lead. I have come to realize that the pencil lead is just too dark to be convincing. Here's what I have come up with. After priming the tracks, I applied a slightly thinned coat of Humbrol Track Color HS 215. I don't have any current stock number info on this color, as my tin is over 15 years old! Gotta love Humbrol paints, plus they spell color with a "U." Next, I applied a buffing of Testor Model Master Aluminum Plate Buffing Metalizer. The bottle says for airbrush only, but this stuff is a dream to work with and dries in really interesting ways. I discovered that even a dried blotch on a paper towel would still give off its color when I buffed over the tracks, so I carried on. At this point, the silver looked a bit too bright, so I buffed over that with black pastel and pencil lead. Once this is all layered up, the look is spot on to the real thing.

A final word on link to link track assembly. Whenever possible, do any clean-up work while the links are still on the sprues, or after you have assembled them. The physical act of handling each and every link takes a lot of time. With this kit for example, I waited until after the links were built up to remove the mold lines. I did this with the runs sitting on the tank, using a fresh X-acto to scrape away the seams. One other benefit of cleanup after completion is that it becomes obvious what will be hidden anyway.

### Capping it off

One of the more unique features of this vehicle is the pair of rear mounted smoke discharg-

ers. Again, the kit parts don't quite cut it. The bases were copied in foil and the tubes were replaced with metal. The mounting brackets were retained, although they were thinned down quite a bit. I also added bolt heads to each end of the pair of hinges on the nitro tank covers. Other items, such as grab handles and hatch levers, were added from brass wire.

A secret weapon of mine created headlamp lenses. The official name is Acrylic Cabochons. Say what? Basically, they are crystal-clear plastic domes used in crafts such as decorative clothing making (old lady sweatshirts with goofy designs). Typically, I saw them in half then begin to sand them down. You can arrive at an infinite number of diameters; just stop and check the fit once in awhile. The backs were painted with my new friend, Aluminum Plate Buffing Metalizer. White glue was used to attach them (obviously after painting the kit). That may sound like a lot of trouble just for the headlamps, but it saves me from having to look all over or trying to special order just the right diameter. I've always got the right size waiting there in the parts bin. What the heck, I bought a bag of 100 for less than \$3 and haven't put a dent in it.

Finally, I added a couple of tool clasps from Aber and some Tamiya tools. The clasps were made workable so I could add the tools after painting.

### War paint

A number of parts were left off to facilitate painting, including the rear fenders, smoke dischargers and tracks. The kit was thoroughly washed in warm soapy water, then with isopropyl alcohol. I always finish up with an alcohol wash to chase away any water hiding in the cracks and crevices. Next, the kit was primed with a light gray automotive primer. I chose to go with a Panzer gray base coat and a sand-yellow over spray to add some interest. The gray was given a faded look by over spraying a lighter shade of itself and then the yellow camo was

applied. Next, I added the crosses from Archer Fine Transfers. Once you've tried these, you'll think back about all those times you killed yourself trying to hide decal film. They go on very quickly, and can be weathered right away.

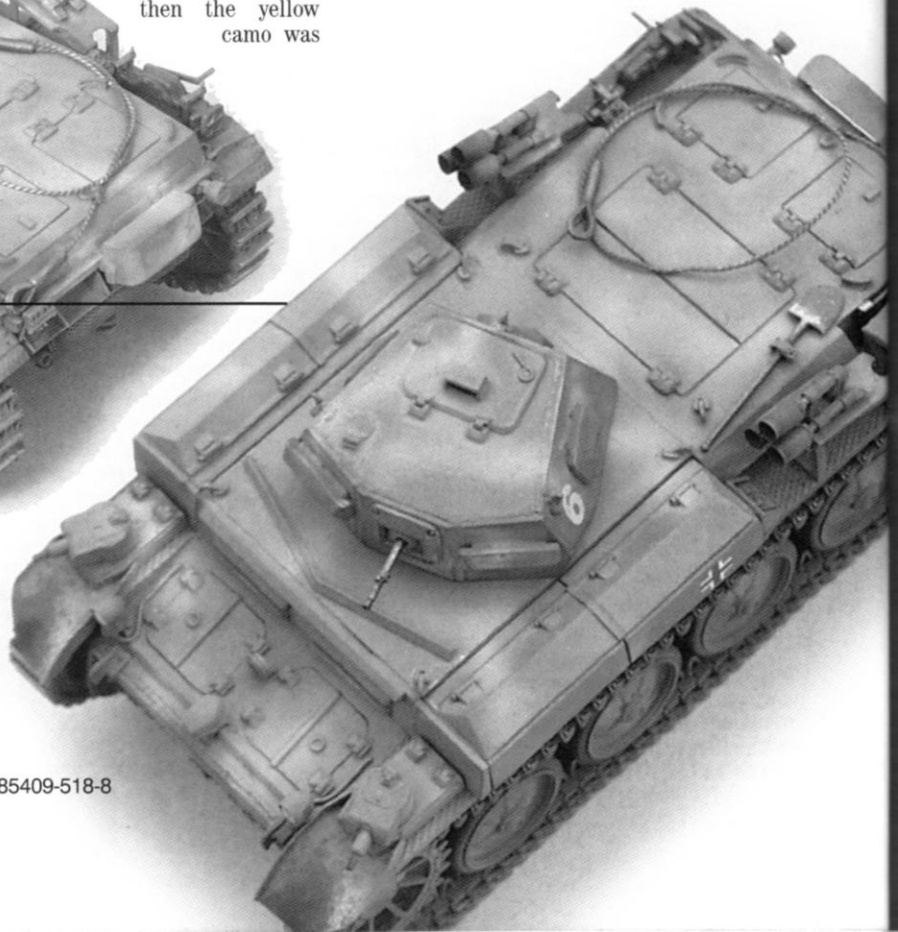
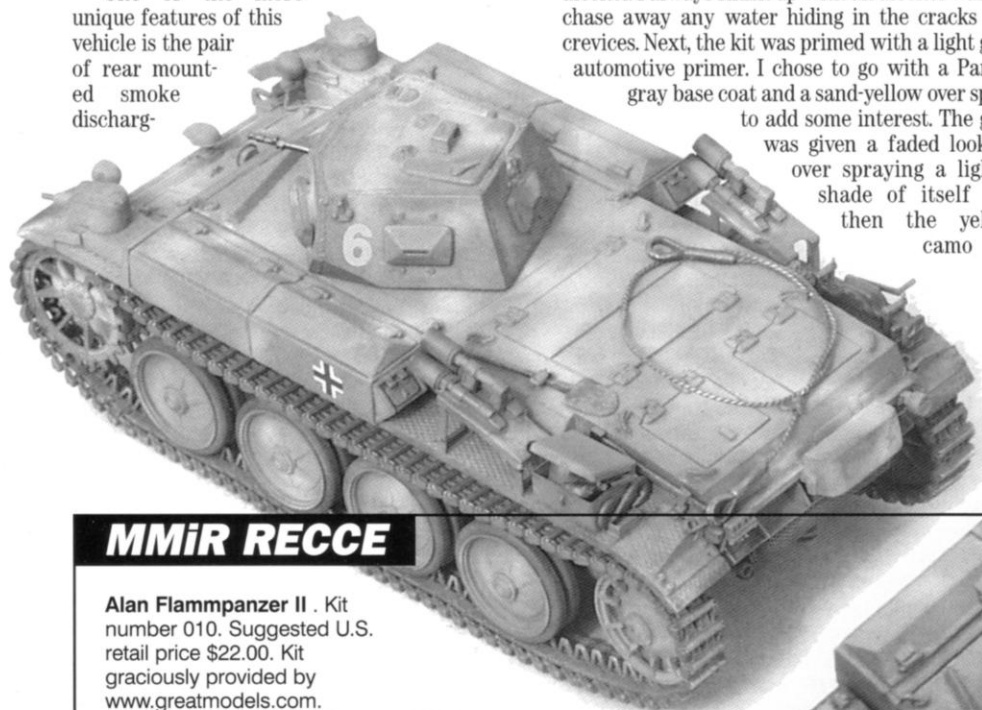
Next, final assembly was completed, including supergluing the tracks in place and the kit was ready for weathering. It's a good idea to spray a coat of flat over everything before weathering. Washes have a nasty habit of lifting paint work. Speaking of the wash, my favorite happens to be oil paint, mixed into Ronseal lighter fluid (*did he say lighter fluid?*—Ed). This formula dries very quickly, so you get almost instant feedback. There is even a moderate amount of 'undo' with this method.

For a dusty look, I add a small amount of talcum powder. I generally use black and dark brown for the lower hull and running gear, and switch to a lighter brown for the upper surfaces. As with every weathering technique, take it easy and work in stages. This is especially true with washes because any wash solution (besides maybe water or alcohol) will begin to eat away at the kit and paint if you continue applying it without giving the kit a "rest." Working in stages will give you time to evaluate your progress and not go too far, which is a common mistake. Do you want to model the vehicle, or the mud?

### Verdict?

For such a little guy, quite a bit of effort was expended for improvements. Most of my time was spent adding missing details and weld seams, and rebuilding sheet metal parts. Still, the basic hull and suspension build up nicely and the flamm parts are accurately rendered. Plus, it was just plain fun to build. I can't compare it to the resin offering, except that at around \$22 USD, it's a pretty good value. Lastly, I'd like to thank Woody Vondracek of Archer Fine Transfers and the very knowledgeable newsgroup inhabitants of [www.track-link.net](http://www.track-link.net) who helped bring this model out of the closet. ☺

—Randall L. Loudermilk



## MMIR RECCE

**Alan Flammpanzer II**. Kit number 010. Suggested U.S. retail price \$22.00. Kit graciously provided by [www.greatmodels.com](http://www.greatmodels.com).

**Archer Fine Transfers German WWII**

**Balkencruz #1**. Set number AR35043. Suggested U.S. retail price \$11.95

**Tamiya Panzerkampfwagen IV On-Vehicle Equipment Set**. Kit number 35185. Suggested U.S. retail price \$4.00

**Aber German Clamps and Clasps**. Item number 35A20. Suggested U.S. retail price \$5.00

**The Beadery Craft Products Acrylic Cabochons 006 Crystal**. Item number CEX550V. Suggested U.S. retail price \$3.00

### References

*Encyclopedia of German Tanks of World War Two* by Peter Chamberlain and Hilary Doyle, Arms and Armour 1978. ISBN: 1-85409-518-8  
*Panzer Truppen 1* by Thomas L. Jentz, Schiffer Publications. ISBN: 0-88740-915-6



# Baby Blitz

it's opel junior,  
in 1/48th  
scale!



**T**he Opel Blitz 3-ton two wheel drive truck was used by most if not all services of the German forces during WWII. This versatile platform provided many different versions from communications and command variants to ambulances, tankers, flak guns and repair trucks. Powered by a 68-horsepower, 6-cylinder engine, it proved to be very reliable and roadworthy. There were some 70,000 units built between 1937 and the end of the war.

## The Kit

The FM Detail Sets 1/48th scale Opel Blitz is a full kit boxed with resin, brass and photo-etched parts. A small clear sheet is also provided for the cab windows and the box has very nice photos of the finished model.

The photo-etch set contains one registration number plate for Army and three plates for Luftwaffe, along with windshield wipers, rearview mirror, spare tire rack, foot pedals and various other do-dads. No decals or pioneer tools are provided.

There are some beautifully detailed castings in this kit details like the reinforcement

ribs on the sides of the stake bed and the fine detail around the window opening in the cab are so delicate they were damaged during shipment.

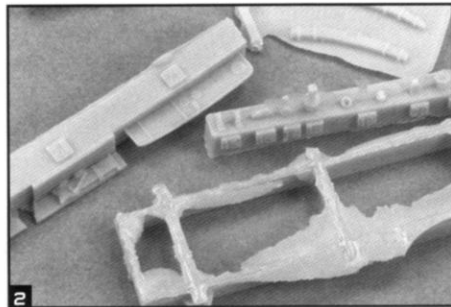
Most parts were free of warping, but the stake-bed sides and floor required a soak in hot water to bring them back to a reasonable shape. The wood parts are nicely detailed and the instructions are good, but somewhat vague on the placement of some parts.

Within the instruction's four assembly stages, I treated the chassis, stake bed and cab as sub-

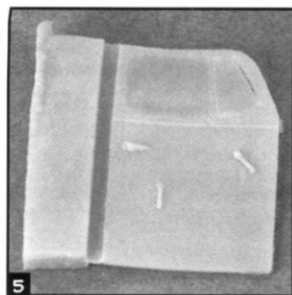
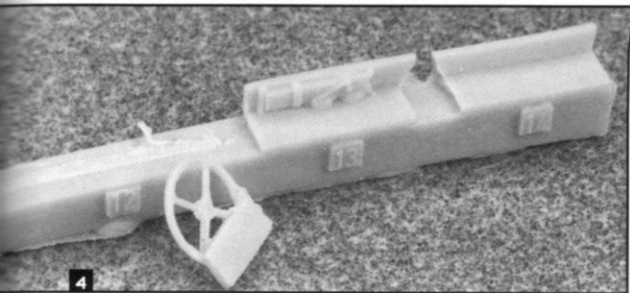
assemblies. I finished and painted these assemblies before adding them together.

## The chassis

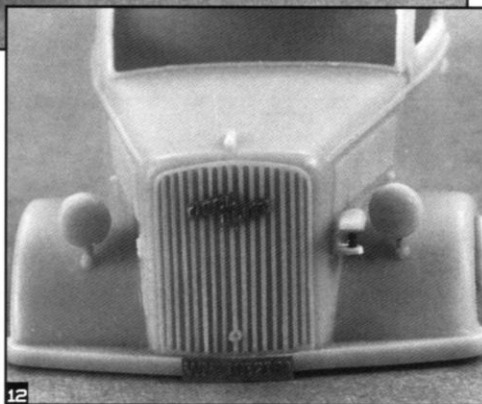
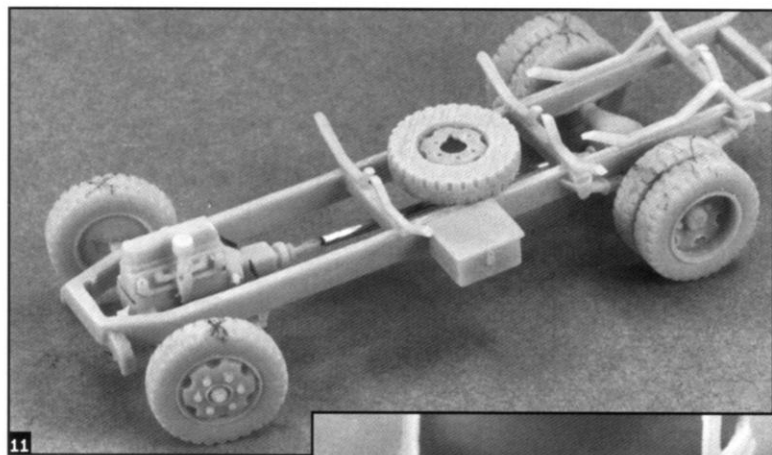
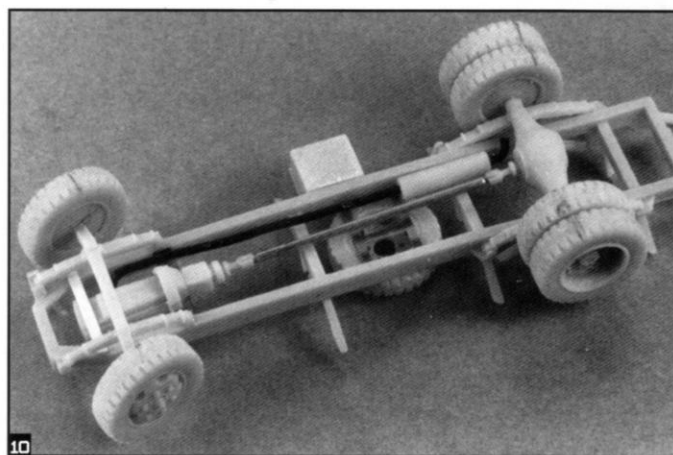
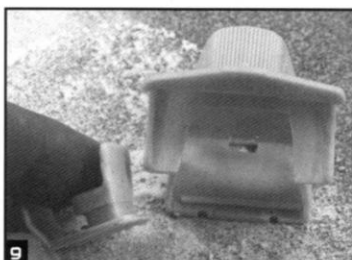
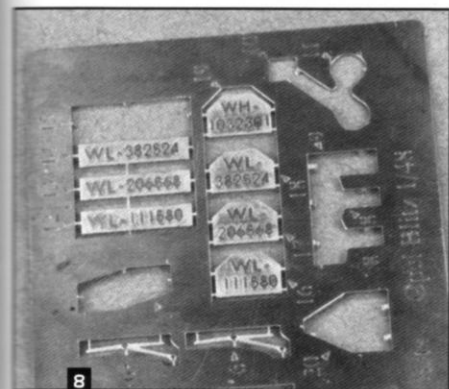
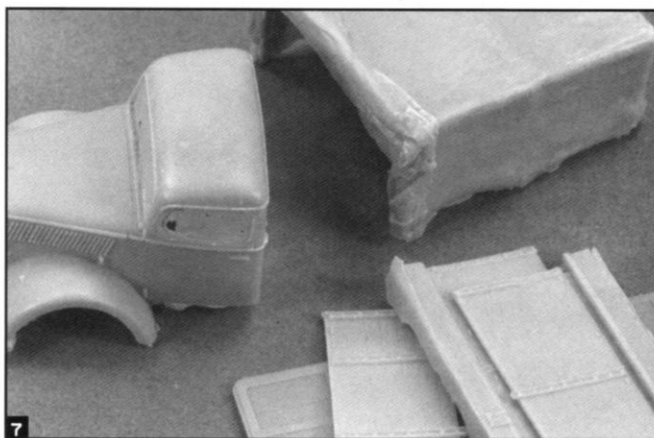
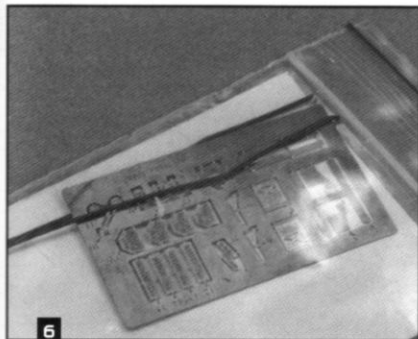
The chassis is really quite simple to build. The







1. Overall view of the resin parts in the kit. 2. This photo gives you an idea as to what is involved in cleaning up this resin. 3. Here you can see the nicely detailed tires and wheels and also the left side of the engine. 4. The steering wheel and running boards in their casting blocks. Have fun getting that steering wheel out of there alive. 5. You are given the option of having the drivers side door modeled open and this is what the inside of the door looks like. Very nice indeed! 6. The photo-etch set can be seen here with a sheet of clear for the windows and various wire sizes for other details. 7. Once cleaned up these parts are very nicely detailed. 8. A close up of the nicely detailed photoetched registration plates and windshield wipers. 9. I added a mounting strip on to the back of the cab to help keep the floor in the proper position for later assembly. This was dry fitted many many times with the interior section. 10. I built this kit in three subassemblies. This is the underside of the finished chassis with my aluminum drive shaft and wire exhaust pipe. 11. This view shows the topside of the assembled chassis. I marked the best side of the tires before I torqued them down. I spent a good deal of time leveling out the stake bed mounts so it set on all points. You can see here how much I had to sand the spare tire in order to get it to clear the bed. 12. The cab fits out nicely with the photoetched Opel-Blitz insignia and registration plate.



engine mounts were not fully cast and this made it a bit difficult to locate the engine. If I did it again, I would mount it about 1/8th of an inch closer to the front of the frame. I made a basic forward engine mount out of styrene strip.

The left side frame mounted toolbox does not have locating holes or markings, so I put it in the vicinity of where it should be using the painting guide as an example.

The photo-etched spare wheel rack did not fit between the frame rails. I sanded away a small

lengths of .040 steel wire were provided in the kit but I felt they were too thin and wavy, so I used my

own .065 aluminum tube instead.

### The cab

There was a considerable amount of clean up on the cab, which, I suppose, is to be expected with a casting such as this. It looks very good once it is cleaned up.

Before going any further, I suggest that you dry fit your windows before any detail is added to the cab. I didn't do this, but I should have. A clear plastic sheet is provided without a template for your windows. Have fun!

The interior has a very nice diamond-tread patterned floor, a detailed dash, photo-etched foot pedals and a textured seat cushion. I left this assembly out until last and also made mounting strips in the cab so I could add and remove the interior as I built and painted the two assemblies. I trimmed the inside of the running boards to make it easier to test fit the interior assembly. You may want to just leave them off until the cab and interior is finished. Brass wire is supplied in the kit for the shift levers.

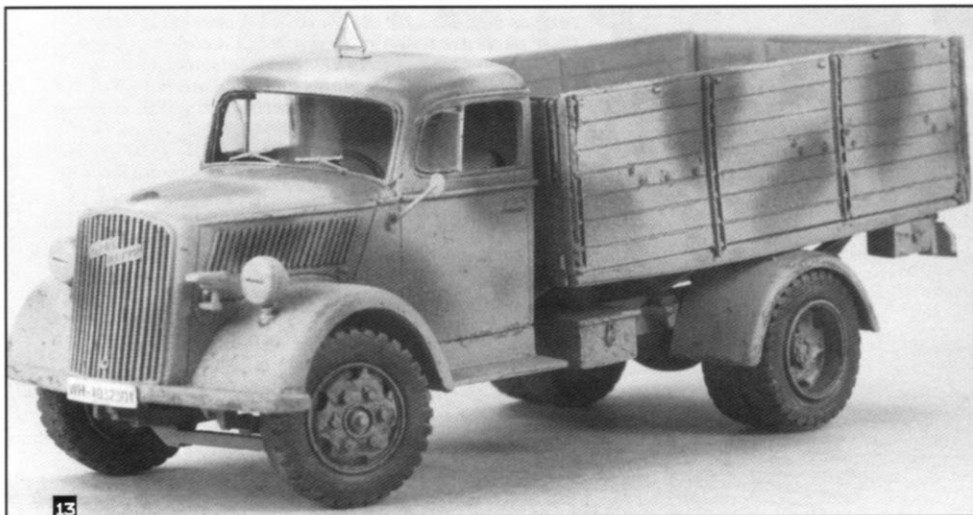
The steering wheel is very fragile and will be tough getting clear of the casting runner. Be very careful, I wasted mine. All was not lost; I built it back up.

I shimmed up the rear of the cab so it would sit level on the frame. No big deal, just a bit of fine-tuning. You are given a very nice extra cab door that is



13. Here is an overall view without the canvas top. The assembled model looks mean and ready to haul "you know what." 14. This view shows the nice photo-etched foot pedals and interior details. The rear stake bed goes together pretty well and looks good with the canvas/tilt added. 15. A left rear view shows the nicely detailed canvas tilt. I tried to show some wear on the upper rear fenders where the guys may be standing as they handed each other various pieces of cargo from the bed. Now that I look at it again, I may have gone a bit overboard, if you know what I mean. 16. This view shows the finished model from the rear. I love the look of the wheels on this kit; they really give it that

rugged look. 17. I tried to show wear and tear from cargo on the rear of the cab in this shot of the stake bed. This was done with a Prismacolor sepia art pencil. 18. A right front shot of the cab shows the running board mounted jack and the nicely detailed cab. I modeled the door vent windows open, as this cab was one major pain to mount glass in. I suggest you fit all window glass at the very beginning of building the cab. I did not...



detailed on both sides, in case you want to display it open to show interior detailing.

The canvas, or tilt, casting is fairly rough out of the box, but with a little nurturing it looks pretty good. The triangle on the cab roof that signifies this vehicle is towing a trailer is from the photo-etch sheet, looks very good and is to scale.

Tow hooks are provided for the front bumper of the cab, but I left them off. I see they are not on the box-top model either. Photos of the real thing show they were not always used.

#### The bed

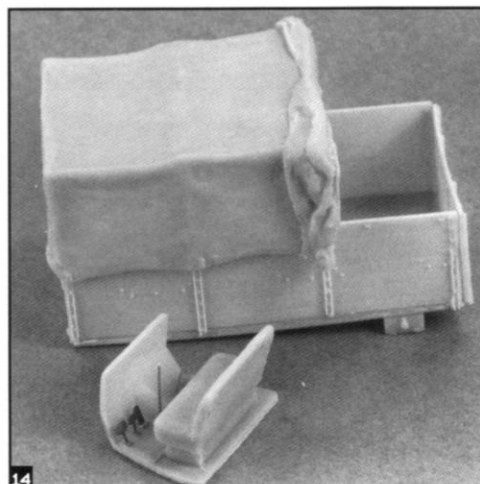
There was a small amount of warping in the stake sides, but then they are usually ragged and wobbly on the real thing anyway. A soak in hot

water helped straighten them out. I felt the joint at the corners could have been better.

The bed mounting brackets were very uneven, so I sanded each one level to meet the lower surface of the bed. This took a good deal of time and when I was finished the spare tire needed to be thinned to fit between the frame rails and the bed floor.

#### The paint


I base painted the chassis and lower areas of the bed and cab Model Master Schwarz Grau. I then over sprayed the outer surfaces with Model Master panzer Dunkel Gelb to give the impression of a field type paint job going to dark yellow from panzer gray. A camo pattern of Floquil Military Colors



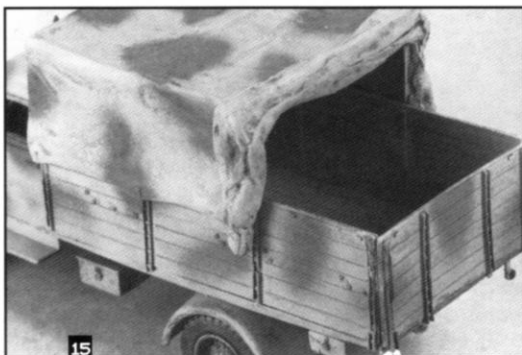
panzer olive was applied next. I sealed this with Testors semi gloss lacquer and applied an oil wash. Once this was good and dry I put a layer of Testors Dullcote on and dry brushed the base paint with lightened base colors for highlights. A final dusting of Tamiya buff was applied to simulate dust. Small particles of dirt and wear of the paint were simulated with a Prismacolor sepia art pencil. For bright metal wear, I used a standard pencil.

I painted the interior panzer gray and the seat cushion Tamiya dark earth. There were no decals or markings provided.

#### Conclusion

For those of you into the 1/48th scale scene, this may be the Blitz of your life. It looks good, it's easy to get along with and will look great parked next to your Stuka. Enjoy! 

—Barry Beaudry

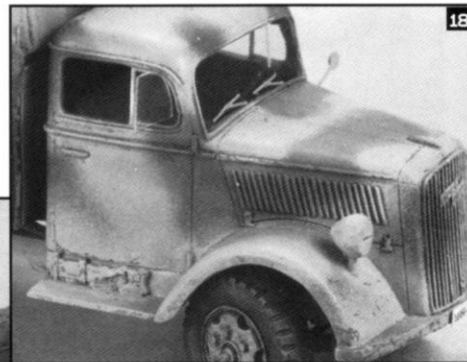
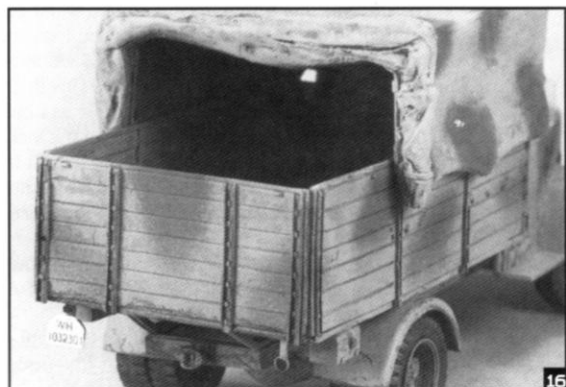


## MMiR RECCE

**FM Details 1/48th scale Opel Blitz 3-ton truck.** Kit number #489702. This kit was originally provided by FM's U.S. Agent, Precision Parts Corp. Precision has been out of the loop for a while now and we were unable to locate a new U.S. source by press time. FM is still producing the kit and as soon as we locate a new U.S. source we will print it in an upcoming issue of MMiR.

#### References

*World War Two Military Vehicles Transport & Halftracks* by G.N. Georgano, Osprey, 1994 ISBN 1 85532 406 7.





# Types Times Two



the type one and type three japanese tanks from finemolds

**T**he lieutenant watched as the heavy tank crept slowly through the underbrush, its thick skin faintly reflecting the moon light. Its huge engine roared as it suddenly spurted through the hedgerow. Anti-tank shells bounced off its glacis in a shower of sparks, much to the amazement of the anti-tank gunners, who slowly began to withdraw. The lieutenant quickly began to realize that this would have to be his course of action, as well. There was nothing in his arsenal that could defeat the hide of this armored monster that his enemies called the 'Sherman.' "How's that again? The Sherman?"

Yes, my friends there was an armor race of a different sort going on in the Pacific. The heavy tank concept that was brewing in Germany in the thirties was to spawn the development of the "breakthrough" tank. This led to such tanks as the Panzer IV and the Tiger I. American development of the Sherman was seen as the next step up from the Panzer III and the Panzer IV. In Japan, however, the tank was seen as primarily an infantry support weapon. This was largely conceived in an environment where enemy tanks were non-existent. Much of the early Japanese tank development focused on the so-called tankettes, small two or three man, thinly armored vehicles.

With war looming on the horizon, rumors of new tank designs started to make their way across the Pacific. At this time, the Japanese army decided to develop a completely new tank, the Type 97. This tank followed many of the design principles being popularized in Europe at the time and this included

a fully functioning turret with a spot for the commander to accomplish his job without interference. The Type 97 used an exterior sprung suspension and mounted both a 57mm main weapon and a 7.7mm MG. The 57mm gun was a short bore gun and it suffered from a fairly low muzzle velocity. Coupled with thin armor, the Type 97 did not fare well in early engagements with Marine and Army Shermans. A short-term solution was realized with the installation of the 47mm Type 1 main gun. This gun had an improved muzzle velocity and could penetrate 70mm (2.76 inches) of armor at 500 yards. These tanks were known as the Type 97 (Special). Eventually, a completely new tank was designed around this gun. This tank, known as the Type 1, also featured a more powerful engine, improved armor layout and thickness (2 inches) and two 7.7 MGs in the turret, along with the larger gun. The suspension remained very similar to the Type 97.

In order to come out on top of the Sherman in terms of armament, a further development was made in the Type 3 medium tank. The Type 3 used a completely new turret mounted on a slightly modified Type 1 chassis. The turret was enlarged to encompass the Type 3 75mm anti-tank gun. Only 50 or so Type 3s were built by the war's end in 1945. That wasn't the end of it either. Even heavier designs were prototyped. Both the Type 4 and Type 5 were taking shape in the summer of 1945.

## Is there a model in our future?

So, there's your history lesson. Japanese armor has long been a sort of "boutique" interest among the armor-modeling brethren. Of course, they love it in Japan, but it has tended to be a rather shadowy

group in the English speaking world. Surprisingly, there are plenty of really nice models out there, both in resin and plastic. That brings us to the subject(s) of this little story. This article will be the first of a long-running series that will explore Japanese armor. We are starting out of chronological order, but since the Type 1 and Type 3 are the newest of the plastic lot, we thought it the best place to start.

The Japanese company FineMolds has a well-deserved reputation for quality that goes back several years with both aircraft and armor kits. The armor items have been exclusively Japanese. Their first armor kit was the Type 95 tankette and it was released about eight years ago. It followed the trend of the time by being a "high-tech" kit and the price was way up there. The more recent releases have been much more down to earth in price and FineMolds has even sparked up a nifty line of accessories to go along with the models.

I'll be building both these kits at once and calling out the differences as I go. At certain times, I'll deviate to discuss one or the other specifically.

## And now on to our show

If you have built any of the old Tamiya Type 97 kits, these kits will immediately seem familiar. Both of the models are 100% new moldings, but the design of the lower hull and suspension is reminiscent of the older Tamiya series.

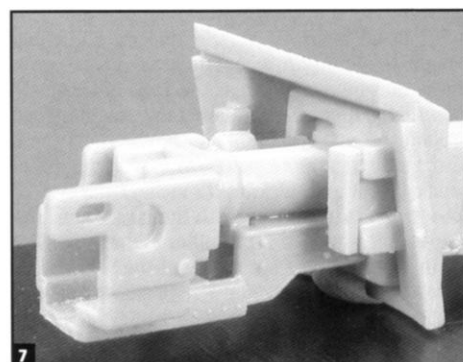
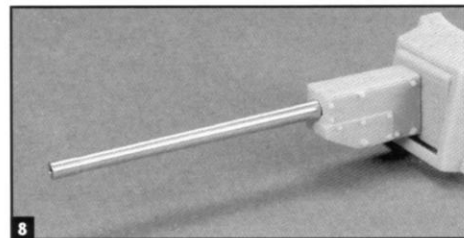
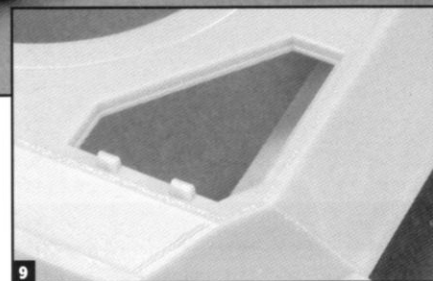
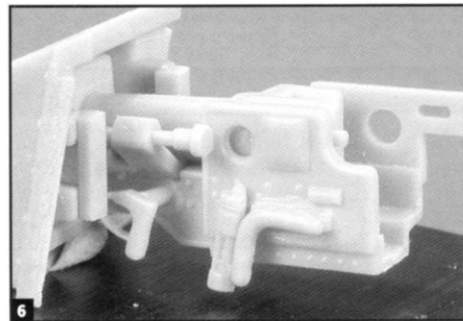
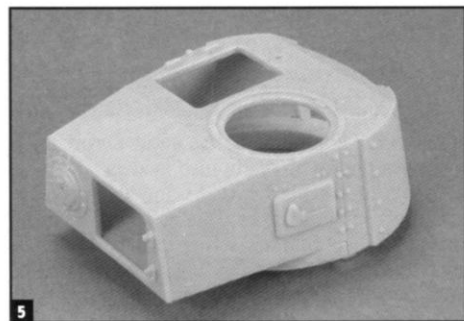
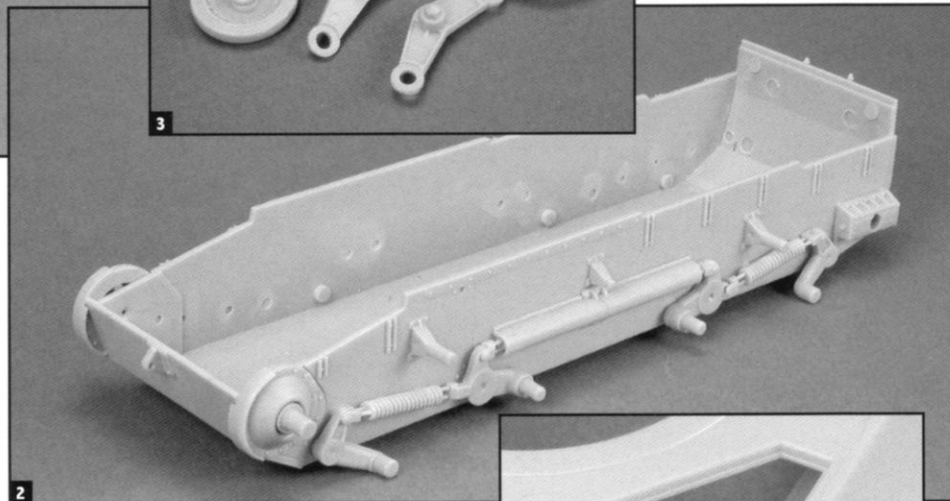
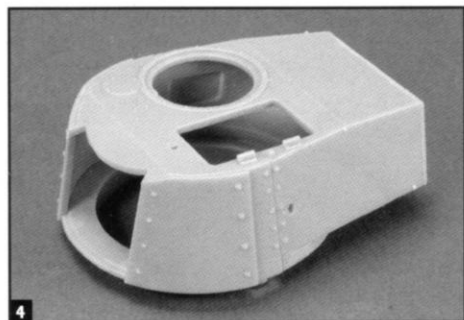
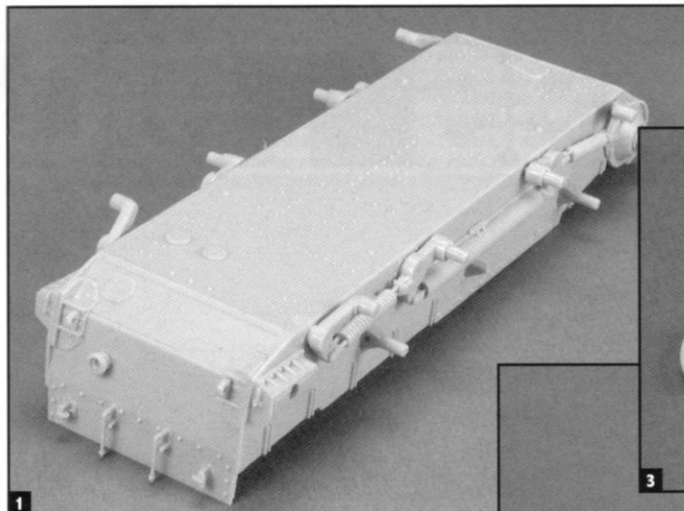
The suspension and roadwheels in the two kits are identical and this is your first indication that these guys know their stuff. All of the components are very finely detailed.

Watch out for parts B27 and B28. These are the



1, 2. This is the basic lower hull. The two kits are pretty much identical at this point. Note that the hull is fully detailed throughout. 3. These are the basic suspension components. The suspension arms get trapped between two sets of roadwheels on each side. 4, 5. Two views of the Type 1 turret. The size of those hatch openings are will necessitate a little interior detail. 6, 7. Hey, what's

this? Interior detail! How cool... These are two views of the breech detail found in the Type 1 kit. 8. I used the 47mm gun barrel from FineMolds to supplement the plastic one. 9. One of the big differences in the hulls of the two models is the presence of a hull top hatch in the Type 1. Here it is without the hatch installed.



arms for the large spring assembly on either side of the hull on both kits. They are quite delicate.

Since some of the suspension arms are trapped in place by the roadwheels, painting may present a problem later on. I opted to glue everything on, but made sure that all the wheels still turned.

The hull is a two piece type and the lower hull is a deep mold, rather than flat panels. There are two large sprues running across the narrow part of the casting, which appears to keep the large part from warping. I was impressed by the fact that FineMolds gives you two panels (A33 and A34) to close-up the hull sponsons. Closing up the hull presented no problems. There is a front and a rear panel and everything fit perfectly on both models. The upper hull of the Type 1 has an open hatch on

around them and the heads fit down over the rods. Cool. The 7.7mm machine guns that mount in the hull and turret are also worthy of note.

My favorite parts on the hull are the headlights. These actually have small light bulbs cast inside and clear lenses are provided to cap them off. A small clear lens is also provided for the taillight.

FineMolds produces a small, etched set for each of these kits and it was at this point that I started putting them to work. Each of the sets includes parts for the exhaust shrouds, tool clamps and the fender mounted jack, along with a variety of other small parts. A small placard is also supplied for the front end of the tank. I opted only for the exhaust shrouds and I decided to use the jack mount only on one of the tanks (the Type 3) for comparison purposes.

The Type 1 sheet is the more elaborate of the two sets, in addition to the above mentioned items, it contains two different sets of exhaust shrouds, bolt heads and even a pair of eye glasses.

Although I was enticed by all this etched craziness, I felt that the better part of the plastic parts were just "Fine" the way they were. The tool clamps, for instance, were very pretty to look at plastic. So, the majority of the etched items stayed on the sprue.

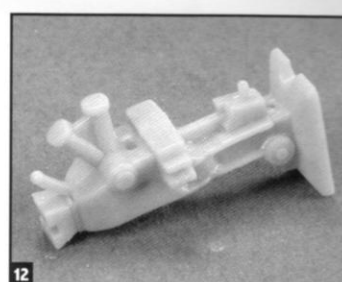
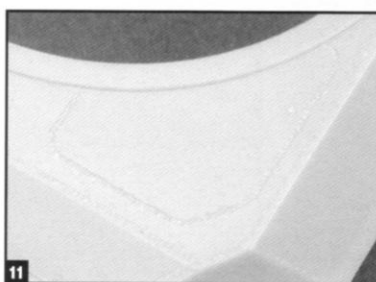
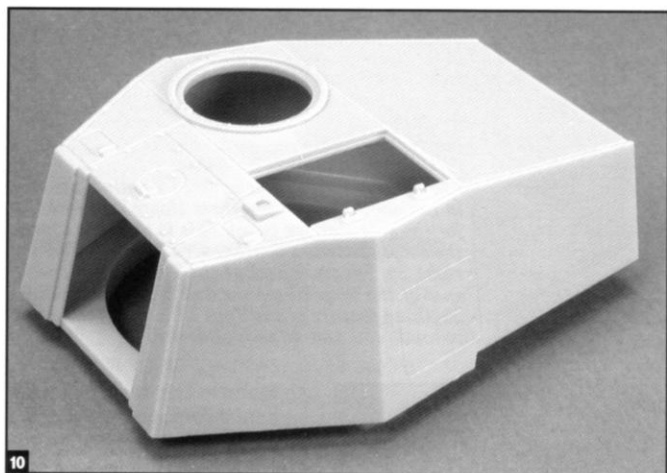
The jack bracket was installed on the Type 3 and the design of the parts was quite clever. The bracket can be made to work, which is handy to remove the jack for painting. Care must be taken to fold the bracket part the correct way or the top flap will not line up. The plastic jack part (A7 in both kits) must also be modified by scraping away its

the left-hand side. Because of the larger turret, this is welded shut on the Type 3.

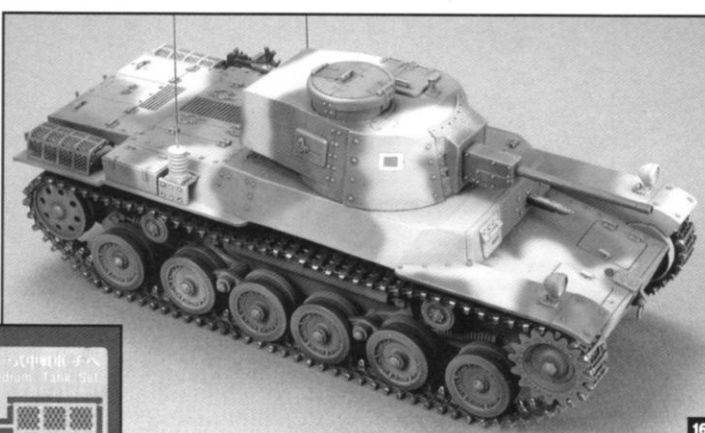
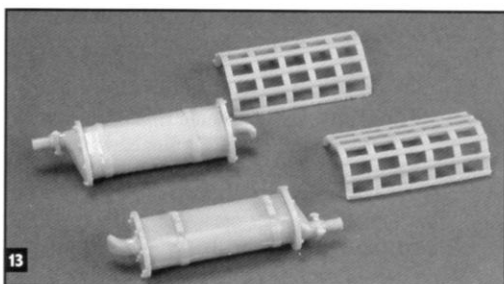
#### Details, details!

Much of the heart of these two kits lies in the hull details. There are a variety of very finely cast parts to trick out the hull. The tools, exhausts and tow cable mounts are especially nice. These last items were a bit of a mystery to me. They are basically two rods, which emanate from the rear hull at a 90-degree angle. The cable was simply looped

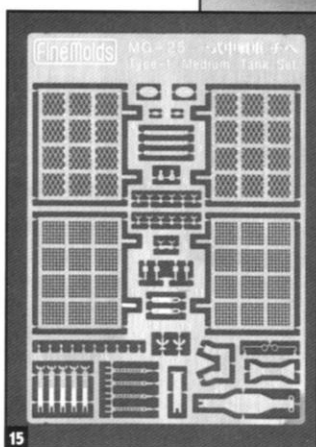
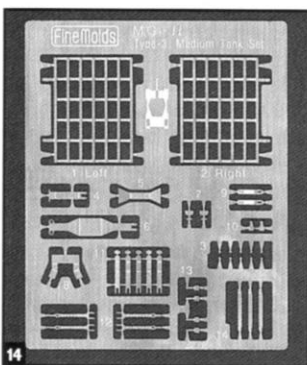




10. This is the radically different turret of the Type 3. Its much larger size is to accommodate the larger 47mm gun and ammo. 11. Because of the larger turret the hull top hatch was eliminated and the opening welded over. This shot shows the sexy FineMolds weld detail to good advantage. 12. The jack as it appears in both kits. Later one of the jack was modified to utilize the photo-etch parts designed by FineMolds. 13. The basic mufflers and their shroud from the Type 3 kit. The shrouds were also replaced with FineMolds' photo-etched parts. 14, 15



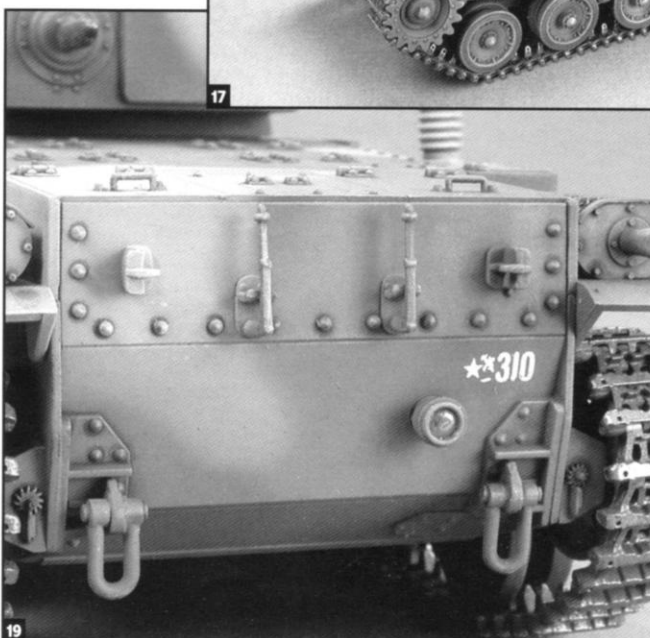
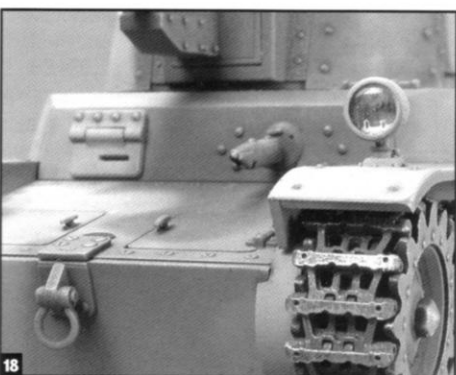
16. This is the finished and painted Type 1 kit. 17. Ditto on the Type 3. Note the different tone of the camo pattern. This was accomplished by over spraying with Tamiya Khaki Drab. 18. The front end of the Type 1. I love those headlights! 19. The rear hull of the Type 1. The two parallel rods are for stowing the tow cable. The number plate is a dry transfer.



molded on bracket.

Both tanks received their etched exhaust shrouds at this time, as well. No special modifications were needed to install these. The plastic kit parts were used as a bending guide. Two tabs are on the bottom of each shroud and these fit into corresponding slots on the fenders. When the tabs are folded, the shrouds snug right down. The backside of each muffler also acts as a guide for the shape of the shroud.

Watch out for the those tow cable rods mentioned above. They continued to be in the way and seemed ready to break at any time.

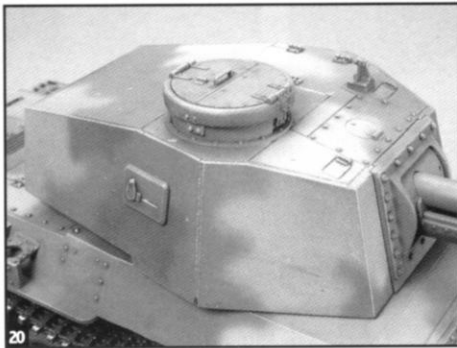
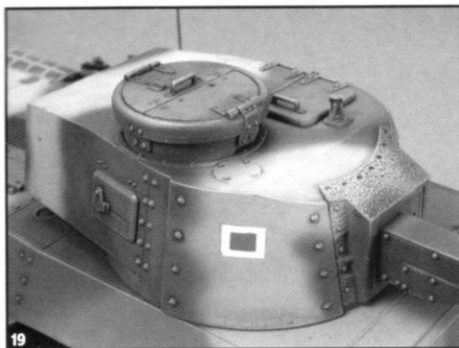


### It's all about the turrets, man

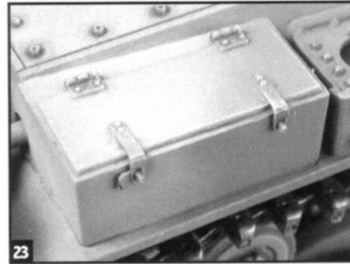
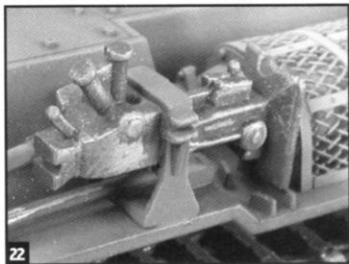
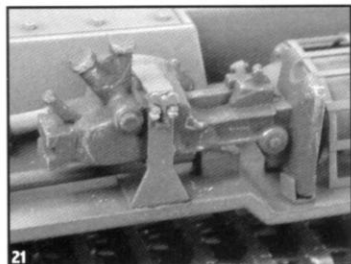
The most radical difference in these two kits is their turrets. The turret of the Type 3 is much larger, but a significant difference is the fully detailed gun and breech in the Type 1 kit. This is quite a nice feature and it sure helps if you decided to leave the hatches open. In the case of the Type 1, I opted for the installation of another of FineMolds' aftermarket items; a 47mm tuned brass gun barrel.

They also offer another nifty option that is included in each kit. This is the

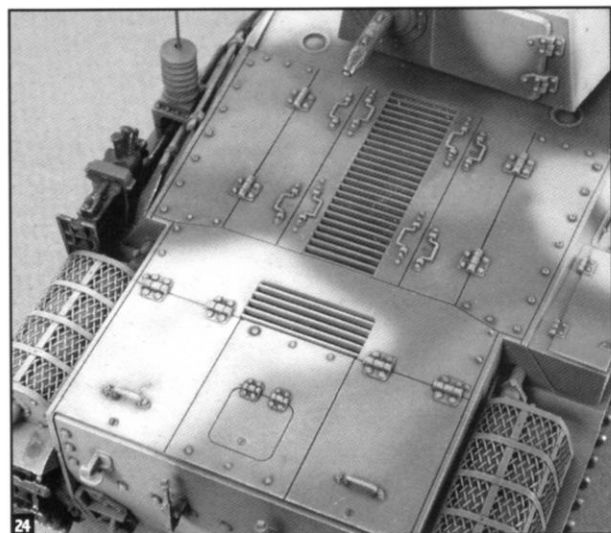




19, 20. The two turrets side by side. Similar components are used, such as the commander's hatch and the vision ports. Both the turrets can be built with an MG mount. Note the base to the front left of the commander's hatch. Since no MG is provided, I opted to show the mount empty. 21, 22. This shows the FineMolds photo-etch (on the left) and the stock plastic part. The photo-etch muffler shrouds are also visible here. 23. Another option in the photo-etch set are these clasps and locks for the side storage boxes. This is the Type 3, note the empty antenna bracket seen at the extreme right. 24. The back deck of the Type 1. The presence of the large antennae and bases is a distinguishing feature of the Type 1. The muffler shrouds can also be seen clearly here.



Reference on the Type 3 was a bit harder to come by. There is a single scheme suggested in the instruction and it contains only one marking, a small star on the bow. I used several articles in the Japanese modeling magazine *Armour Modelling* as a reference. These seemed to indicate a much duller scheme than that used on the Type 1. In the end, I used the same basic scheme, but applied it



in larger bands across the vehicle. Then, I gave the entire tank a soft over spray with Tamiya XF51, Khaki Drab. This sufficiently muted the finish and gave the tank an entirely different look.

The Type 3 was also weathered with an oil wash and both tanks were drybrushed with lighter shades of the base colors using Vallejo acrylics.

The head light assemblies of each tank were painted silver and the clear lenses were added. The rear light was painted Tamiya Clear Red prior to installation.

Each tank set was painted with a mixture of black, silver and red and then drybrushed with steel.

### The setting sun

OK, that's my story. I thoroughly enjoyed building both these models. I can think of no significant assembly problems in either. How often can you say that! I also enjoyed the accessory sets and I highly recommend any of these products. Banzai!

—Pat Stansell

installation of periscopes around the inside of the commander's hatch. These parts are found on the clear sprue, which is a terrific idea.

An optional anti-aircraft MG mount is provided for each of the turrets, but since no gun is provided, I only installed the gun base.

That was about it for each of the kits. I added the twin antennae for the Type 1 and then tuned my attention to the tracks.

### It's all about the tracks, man

FineMolds provides highly respectable vinyl tracks for these models. These are world's away from the versions you may have seen in the older Tamiya kits. However, I opted for the Modelkasten route. Now, I love Modelkasten. These guys rock my world. BUT—I just didn't like these tracks. First, there are the separate guide horns. Annoying? Yes. But then, you've got the two different linking pins, both of which have to be recessed into the sides of the tracks. The pins never seem to reach far enough in and links frequently come apart at the most inopportune times. I survived it, but I'm hoping for a white metal solution eventually.

### It's all about the painting, man

This was my first foray into painting Japanese tanks. I was greatly assisted in this task by a copy of

## MMiR RECCE

**FineMolds Type 1 "Chi-He."** Kit number FM12. Kit graciously provided by the manufacturer. Suggested retail price \$43.95.

**FineMolds Type 3 "Chi-Nu."** Kit number FM11. Kit graciously provided by Chesapeake Model Designs. Suggested retail price \$43.95.

**FineMolds IJA Type 1 Medium Tank Accessories Set.** Kit number MG-25. Kit graciously provided by Chesapeake Model Designs. Suggested retail price \$13.95.

**FineMolds IJA Type 3 Medium Tank Accessories Set.** Kit number MG-11. Kit graciously provided by Chesapeake Model Designs. Suggested retail price \$13.95.

**FineMolds IJA Type 1 Medium Tank 47mm Gun Barrel Set.** Kit number MG-26. Kit graciously provided by Chesapeake Model Designs. Suggested retail price \$8.95.

**Modelkasten Type 97 Track Set.** Kit number SK-31. Suggested retail price \$43.95.

### References

*Warning: these are a bit on the wacky side and they will be hard to find. Ironically, many of the photos in the following references are from U.S. and British sources.*

*Japanese Tanks and Armoured Vehicles.* Argonauts Publications, Tokyo 2000. Published by the folks at Panzer magazine, this Japanese language publication is probably the single best photo reference on Japanese armor that I've seen. 240 pages, line drawings and tons of photos.

*Imperial Japanese Army Tanks of WWII.* Green Arrow Publishing. Not as expensive as the above title, but pretty cool anyway. Japanese language. 180 pages. At one time, this title was available through The Right Stuff.

*Ground Power.* 1994, 11, No. 006. Delta Publishing. 1994. *Armor of the Pacific War (1).* Japanese language. Covers many of the fielded tanks and armored cars. The Right Stuff has also been a source.



## Custom Dioramics

Lots of new stuff up front and here's their latest figure release.

**4006, Mail Call (Part 1) (1)**, is a trio of GIs catching up on the news. Three seated figures with helmets are included, each guy perched on a wooden crate. In addition, there's a cool resin box of cigars and a printed sheet of newspapers, magazines and pin-ups for them to read.

## Hornet

Roger Saunders continues to set the benchmark when it comes to resin heads. Here's three all new sets to dress up your figgies.

**HGH14, 5 heads wearing 1st pattern SS camouflage soft peaked cap (2)**, provides the early pattern 'baseball' cap unique to the SS. This was produced in several camo patterns and generally bore no insignia. (It also bears a close resemblance to the fatigue cap used by the US Army and others in the 60s, 70s and early 80s.)

**HGH15, 5 different heads with Afrika Korps peaked caps or 2nd pattern SS camouflage caps (3)**, provides the cap developed in North Afrika. It featured the fake, stitched-up earflaps and like the 1st pattern was produced in various SS camo patterns for continental wear. Two of these guys have goggles and the other three wear SS insignia.

**HGH17, 5 different bald heads eating and drinking (4)**, is an instant Hornet classic with five heads chowing down. You'll need these to build that diorama featuring Tamiya's revamped Field Kitchen.

## Jaguar

A fine variety this round, with something for everyone.

**YH-35001, Joachim Peiper & Kurt Meyer, Kharkov 1943 (5)**, supplies those two gentlemen, plus a player to be named later. Peiper and Meyer wear the insulated combination overall and the third man (pointing) wears the 'Kharkov parka'. This is a special release by Jaguar, with a special number, as these were sculpted by Yoshitaka Hirano of C.D. Yoshi and Gunze Sangyo fame. And you know by now that you can't go wrong with a Yoshi figure.

**63126, Winter Watch (6)**, is a pair of Wehrmacht Germans in greatcoats standing in the cold. Both have a fine complement of combat gear and wear helmets. One is leaning on the barrel of his MG42, the other is working the bolt on a Kar98K rifle. Perfect for any winter front.

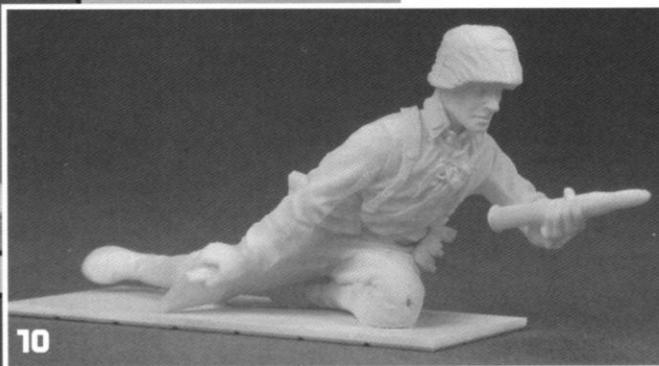
**63127, Getting Hitched (7)**, is a trio of Germans working on the business end of a FAMO. (FAMO sold separately.) But as you've already realized, these guys will work on any German AFV and have tremendous possibilities. Two wear the mouse grey shirt and trousers, while the third

# Mini Men

A peek at what's new on the figure front!







wears the combination overalls.

**63128, Fire! (Crew for 5cm Pak) (8, 9, 10)**, is a rare four-figure set. Included are a quartet of crouching figures wearing SS camo smocks, designed to go with Dragon's Pak 38 (#6118). Two guys have resin shells in their hands and the officer type is firing a flare pistol.

**63129, Comrades in Arms (11)**, has a Jag-O-Rama base featuring rubble, a wall section and a fallen Nazi eagle. A US tanker is cozying up to a very sweet looking Soviet gal. In our continuing quest for Mini-Women, she gets an A+. This is a cute idea (can we use that word? Cute?) for a stand alone vignette or a late war diorama.

**63614, Playing Chicken (12)**, is the fourteenth release in the larger Jaguar vignette series. We can't recall any 1/35 chickens since Tamiya released their Livestock Set many moons ago. This creative set provides a base with a complete elevated chicken coop and two Wehrmacht soldiers rounding up dinner. Two chickens have already been snagged, while two more flee from their pursuer. You're going to have fun with this one!

**60903, Seal Team 2, Vietnam (13)**, hails the return of Maxi-Men to MMiR. This new 1/9th figure from Jaguar is a stunner. The SEAL is dressed in boonie hat and jungle fatigue blouse, plus Navy denim trousers and jungle boots. His pistol belt is festooned with ammo, grenades and canteens (four of 'em, two of which are packed with ammo). Best of all, he's sporting a Stoner 63A with box magazine. You have the option of adding a monkey to his shoulder and extra 5.56mm ammo belt around his torso. Large scale fans, rejoice.

**60908, German Grenadier with Shelter Quarter, 1944 (14)**, is another superb large scale figure sure to please the 1/9th crowd and it was love



at first sight for us. This Wehrmacht trooper is wearing his zeltbahn shelter quarter as a camouflage poncho and is brandishing a 7.92mm Gewehr 43. His equipment includes four ammo pouches, two stick grenades, bread bag, mess tin (with handle), canteen, spade and bayonet. He is attired in standard field uniform with ankle boots and canvas leggings and Model 1943 steel helmet. Guaranteed to please.

## S&T

We mentioned this guy up front. Here he is yet again.

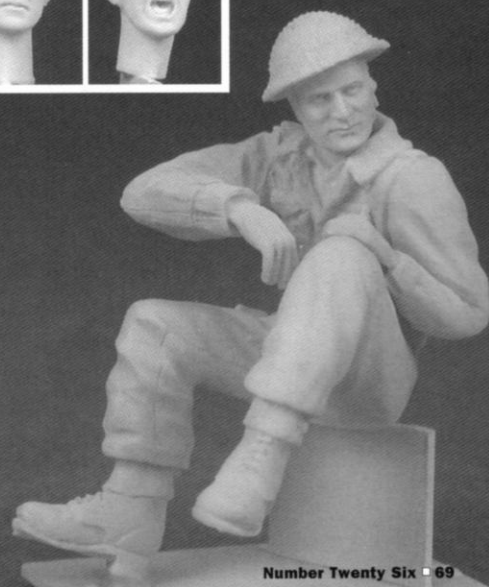
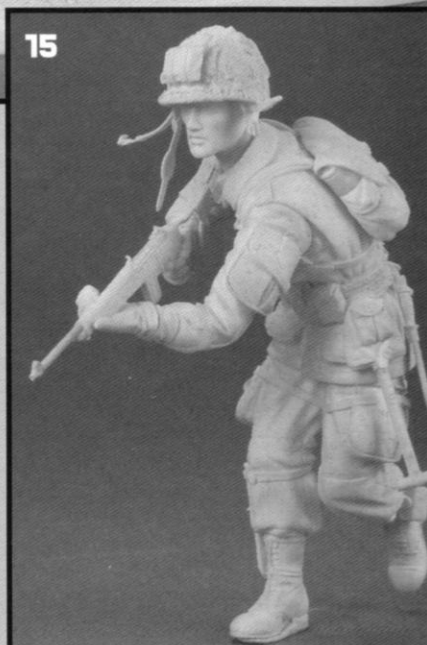
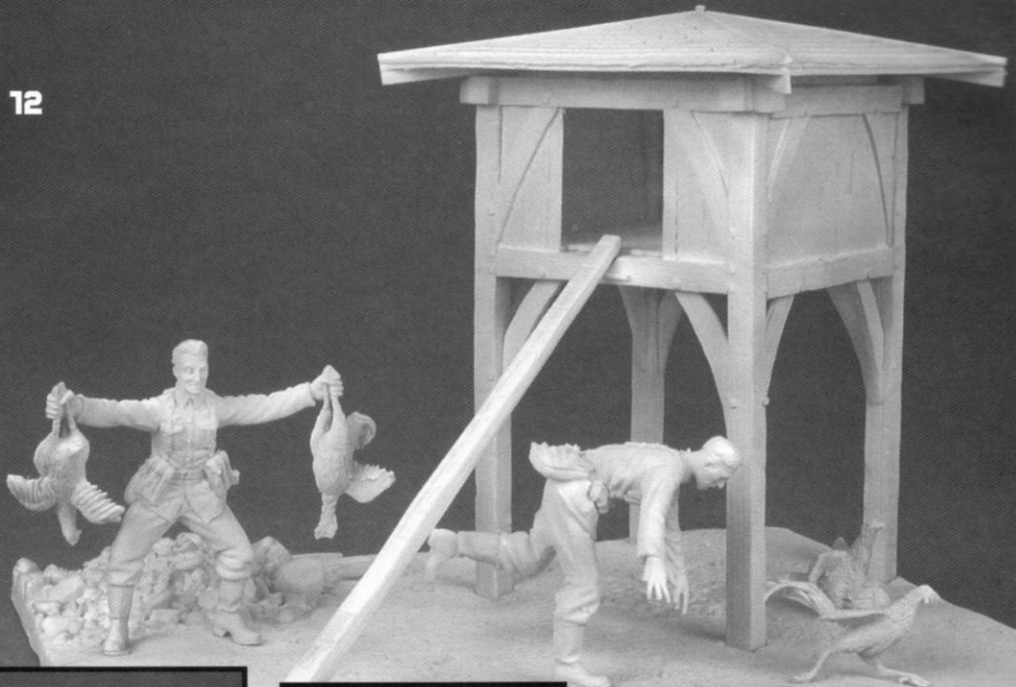
**16005, 101st Airborne Normandy (15)**, is in a word, magnificent. The casting is superb and sculptor Trevor Hensley has nailed the figure with a passion. We normally associate intricate details with medieval or Napoleonic figures; well, this dude is comprised of 25 separate parts and it's a resin party. Wearing the second pattern M1942 jump jacket and trousers, he's at a half-jog, brandishing a M1A1 .30 cal carbine with folding stock. (Wait'll you see how they did the stock!) There's a lot to love here: ammo pouches, pistol, bayonet, fighting knife, entrenching tool, first aid pouch, paratrooper gloves, grenades and more. In fact, we'll go so far as to say this is one of the finest 1/16th figures ever produced. We'll take another look at him in a forthcoming issue.

## Ultracast

These chaps from Canada continue to produce some truly stunning resin figures to fill in gaps in the market. Here are their latest.

**35030, British Heads WWII with Officer's Service Caps (16)**, is five heads all wearing the brimmed officer cap with leather strap. Plenty of expressions to go around.

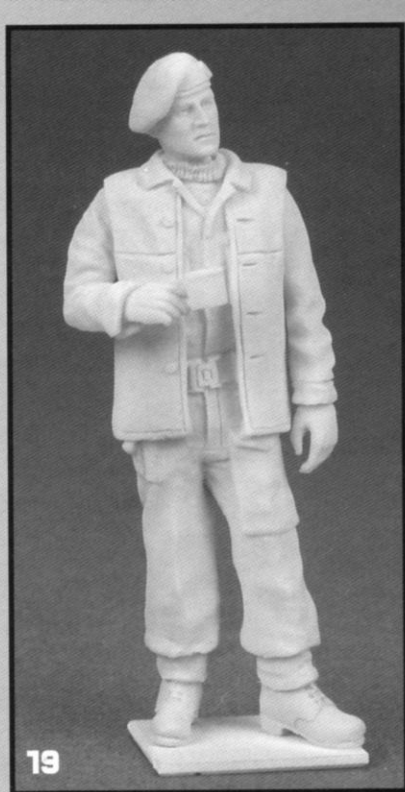
**35031, Canadian/British Jeep Driver, Europe 1943-45 (17)**, is a Commonwealth gent to sit







18



19

behind the wheel of your Willys. Wearing battle dress and steel helmet, he has one foot cocked on the running board and one elbow on the wheel and we like 'im.

**35032, Canadian/British Tank Crewman with Jerrycan, NW Europe 1944-45 (18)**, is wearing either the fly-fronted battle dress uniform or the black two-piece working dress for tankers plus beret and is stepping out with a German jerrycan. He also wears the web waist-belt with pistol case and ammunition pouch. A good 'un!

**35033, Canadian/British Tank Crewman, Europe 1943-45 (19)**, is similarly attired as his comrade with the jerrycan, with the addition of a leather jerkin. Jerkins had their origins in WWI and continued to be worn throughout the Second World War. He is holding, presumably, a cup of tea.

**35034, Canadian Infantryman, NW Europe 1944-45 (20)**, is a

standing figure attired in battle dress with 1944 pattern web equipment and steel helmet, holding a .303. He's in a half-turn pose and will work well in just about any scene.

### Warriors

The Missouri resin madmen continue their barrage of handy figures to load up your dioramas. Here are some of their newest.

**35360, Wehrmacht Infantry Riding Stug #1 (21)**, is a trio of Germans which will go anywhere you need a sitting figure. All three wear the field uniform. The officer wears a schirmmütze and has a flashlight pinned to his epaulette, while two enlisted types take it easy, one holding a rifle and one having a smoke. You'll like these, we promise.

**35370, Wehrmacht Infantry Riding Stug #2 (22)**, features three more sitting fellows. Two with

helmets are having a smoke and a bite to eat, while the third rider holds his einheitsfeldmütze in one hand and wears canvas grenade bags at his sides. More excellent go anywhere figures.

Warriors continues their record-breaking release of head



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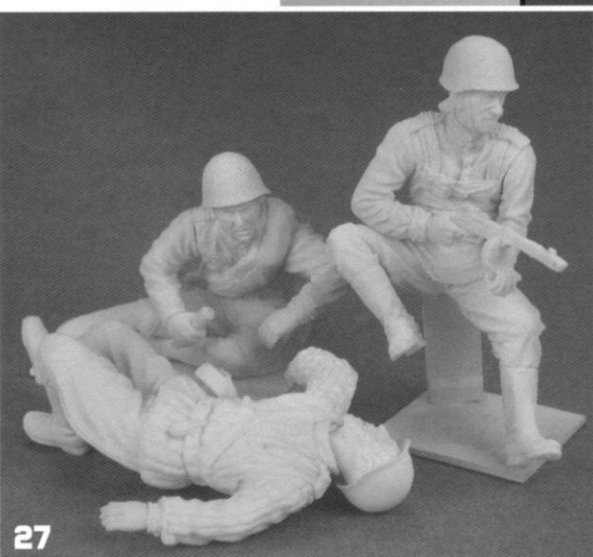
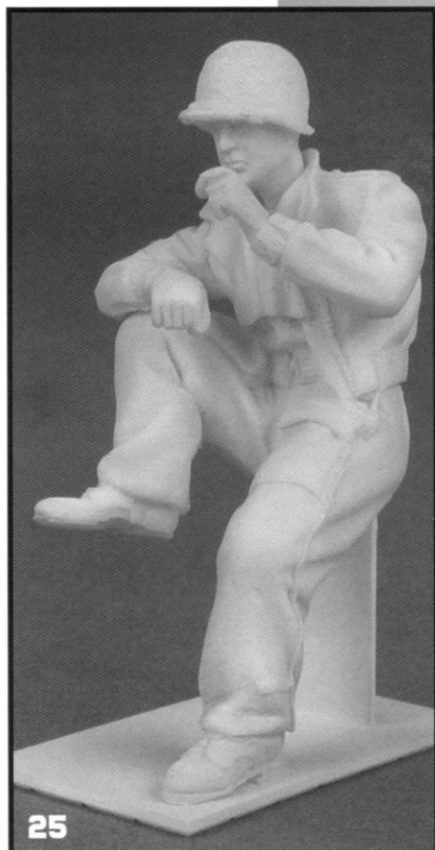
sets with two more. **35369, German Head Set #40 (23)**, provides six heads, five wearing bare helmets and one with a bare head. **35372, German Head Set #41 (24)**, has another six with helmets, this time with camo covers.

**35370, US Tanker (Relaxed Pose) (25)**, has a GI in steel pot and tanker jacket having a smoke atop your latest US AFV. He first appeared way back in #35156, with a different head. A handy guy to have around.

**35371, British Paratroopers Arnhem 1944 (26)**, is a dynamic pair of Red Devils under combat conditions. Both wear the Denison Smock and airborne forces' steel helmet, with full combat load. The pointing gent holds a .303, while his crouching companion brandishes a Bren Mk.2 machine gun. Now where's that 1/35th bridge we've been meaning to build...

**35373, Russian Tank Riders (27)**, are some of the best figures Warriors has ever done. The poses and sculpting are just terrific. The reclining wounded figure wears the padded telogreika jacket, while his two compatriots wear the standard 1943 gymnastiorka with standup collar and shoulder board. One brandishes a PPSH-41, while the other holds an RGD-33 grenade. These guys can be in action or on a vehicle returning from the front lines. Gotta have 'em.

**35374, British Desert Rats (28)**, continues this round's multinational theme with two 8th Army types in steel helmets, tropical khaki drill shorts and shirts, web







29



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CRAP!  
THEY PUT  
CURTAINS UP IN  
THE NURSE'S  
BARRACKS



equipment and the well-known 'stockings' with ankle boots. A couple of relaxed guys to pose in your next desert scene.

**35375, Waffen SS Soldier (29)**, has a one-piece body with separate boots and head. He wears the greatcoat with SS sleeve insignia and the body section includes Kar98K ammo pouches, entrenching tool, bread bag, poncho roll, canteen, mess tin, flashlight and knife. This is a good 'un, folks. We particularly like the way the coat is widely sculpted to allow room for the hands in the pockets.

**35376, Panzer Trooper (30)**, is a Wehrmacht soldier wearing Italian camo trousers and a field grey panzer tunic for tank support troops. He's brandishing a MP44 and includes an ammo pouch and holster.

#### Wolf

The other line from the Hornet family has just released three new resin Germans. Take a peek.

**WSH35, German WW2 Tank Officer with Open Greatcoat (31)**, is a one-piece casting. He wears

panzer tunic, feldmütze, turtleneck, ankle boots and greatcoat and is holding binoculars. The Knight's Cross is particularly well done.

**WSH36, WW2 German Army Cobbler (32)**, is about as clever as they come. Eight boots are included and he's whacking one of them with a hammer. The cobbler is sitting on a crate and wearing an apron and we already have about 217 ideas for this one.

**WSH37, German WW2 Soldier in Short Winter Parka (33)**, is a one-piece body with separate head, wearing marching boots, helmet and short hooded parka with belt. He has his hands in his pockets and looks put out enough to be a prisoner or a guy waiting for a hot meal.

*All figures reviewed in the Mini-Men section are submitted by the manufacturers.*



32



33



# Got a Light?

## Resicast Serves Up a flaming Brit Ram



Well folks here we go again, another obscure Commonwealth vehicle for your building pleasure. Resicast's Ram Badger flame-thrower is the latest release to be based on their fine family of Ram kits and it is a real doozy. To understand the Badger, one has to take a look at the Ram series itself, as well as the development of flame throwing equipment in Great Britain. I will try to be brief because there is a lot of build to cover in this one.

In the summer of 1943 development began on the U.S. M3 series of tanks. During this time there were contingents from both Britain and Canada working with the Army Ordinance team. The M3 was always considered an interim design until the problems with mounting the 75mm main gun in a fully rotating turret could be solved. A proposal was put forth which would have the Canadians building the M3 to augment production.

The M3 was rightly considered inadequate for either a cruiser or an infantry tank due to its high silhouette and the sponson mounted 75mm gun. A compromise was reached in January of 1941 whereby the Canadians would design and develop their own tank based on the tested M3 chassis. The only major automotive change was moving the driver's station from the left side to the right side, which was a British requirement.

The prototype was ready in June of 1941, which, considering the times, was a great feat of both engineering and manufacturing. Although the Ram was primarily based on the M3, the Canadians incorporated many innovative features, such as a one piece cast hull and a bolt on front plate that allowed for quick removal of the main gun. The original design incorporated the 2 pdr., but the Canadian design team, thinking ahead and under their own initiative, paralleled the design of the turret so it would accommodate the 6 pdr.

(57mm) as a future bolt-on package.

Development of flame throwing tanks began as early as 1938 in Britain. The group mainly responsible for this effort was Petroleum Warfare Department (P.W.D.) that concentrated on pressure and pump operated systems. By 1942 a system was produced with a jettisonable trailer that contained the flame fuel, nitrogen pressure bottles and controls. This system was fitted to the Churchill Mark IV and could fire a stream at a range of 80 yards for 60 seconds. This fell short of the original requirement for a range of 200 to 300 yards. In addition the flame-thrower replaced the main armament.

With success at hand, the War office, in its infinite wisdom, did a turn around and concluded that weapons of this type were too vulnerable to enemy fire and the role of a flame thrower could be carried out by infantrymen using the back-pack version. By 1943 the War Office did another 180 and determined that a flame throwing tank would be required, providing it retained its main armament, allowing the tank to fight as a tank when not using the flame throwing equipment. In short, what we end up with here is the Churchill Crocodile that incorporated the Wasp Mk. II flame gun mounted in place of the Besa bow machine gun. The success of this weapon is legendary and is another tale all together.

The Ram in its intended form never saw combat. By the time sufficient numbers could be fielded the Sherman was online and experience in the desert war proved the 6 pdr. to be inadequate. The Ram did however serve as a reliable training tool and a platform for many other vehicles like the Ram OP tank, the Sexton, Ram ARV, Kangaroo personnel carrier and, of course, our subject, the Badger Flame thrower. The Badger was developed at the request of the Canadian armored forces, which felt that increased armor was needed for the Wasp carrier that was merely a Bren carrier with a flame gun. I couldn't agree more.

The Badger is basically a conversion of the Kangaroo personnel carrier that was itself, a conversion. The Wasp flame gun was mounted in place of the front ball mount machine gun and two fuel tanks, a 60

and 40 gallon, along with the pressure bottles were mounted inside the tank. The open turret ring was covered with an armored plate. Most likely, maintenance personnel carried out the conversion in Britain. All of this equipment only allowed for a crew of two. Based on the size of the tanks, I estimate that the Badger had a range of 80 to 120 yards with approximately 20 one-second bursts. This is an only estimate.

The Badger conversion was ready in February 1945 and was used by the 4th Canadian Armored Brigade Lake Superior Motorized Regiment during Operation Veritable. They were also used by the 5th Canadian Armored Brigade in March 1945, but in this case retained the original Ram turret, so this was the nearest the Ram came to seeing combat in its intended form.

### And now, on with our show...

The Resicast Badger is a real gem. Included is a plethora of finely molded resin bits. The mold maker thoughtfully kept the pour plugs to a minimum. Also included are two photo-etched frets, one large one that was a carry over from their Kangaroo kit and a smaller fret, which consists of parts for the Badger. Unfortunately, my example was missing the small fret but we won't hold that against them. You also get the customary lengths of plastic rod and some neat PVC cord, which is used for the various hoses involved with the flame throwing equipment. The instructions feature a photo format of the model in progress with the bits called out via numbered arrows and a very comprehensive verbal step by step that helps clear up the gray areas. No markings are included so you're on your own.

After sorting the parts, I began to notice that this is primarily an interior project, which makes sense. Yes? The fighting compartment is pretty well covered, but the engine compartment is empty. Seemed like a waste to me, if you're going to do an interior, you might as well go all the way. Right? So off to the local hobby shop I went in search of a suitable radial engine. I ended up with the Verlinden engine for the Tamiya M4, not by choice. As it worked out, it was the only one in the shop and the taciturn hobby master grudgingly donated it to the project. Thanks Al.



## Start your engines

Feeling quite happy about my new find I was all set to go. And that's when the gremlins crept in. First off, the Verlinden engine mounts parallel and perpendicular to the firewall.

WRONG! All of the cut away drawings that I have seen of the Sherman, Lee or Ram sporting the radial engine clearly show the engine canted forward at approximately a 7 to 10 degree angle that puts it parallel and perpendicular to the drive train. OOPS! So the engine set is suspect. What to do? Build on, I say. (See cut away photo.)

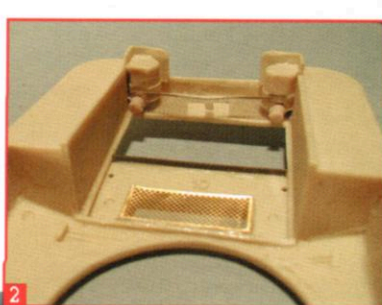
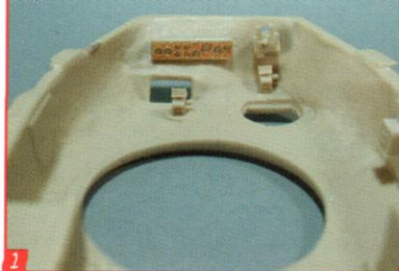
With the engine problem nagging at the back of my mind I moved to the fighting compartment. The transmission housing and rear plate was added first. Filler is required up front. The rear plate has separate engine doors so they can be displayed open. Next the firewall was attached. I used the Resicast part #3 for this since it is nicely detailed on both sides. Then the transmission itself was added, along with the drive shaft housing that runs at the proper angle up and back towards the firewall. The steering linkage was next and consisted of photo-etched drag bars and resin links that attach to the top of the transmission. The links (parts #41 & 42) should be kept as far outboard as possible so as not to interfere with the flame throwing equipment. It is also advisable to have the upper hull on hand to test fit as you go.

Feeling better, the steering levers, clutch pedal, brake pedal and drivers seat were added. The levers being photo-etched did not look right to me, but due to the limited view the finished model would offer I left them alone. Moving up to the sponsons, the left side ventilator fan and duct work installed perfectly and were a nice piece of casting work, if I do say so myself. Now is where that upper hull comes in handy. The No 19 radio (part #27) needs to be cut back on the front outside corner in order for it to clear the upper hull. I carved a bunch off and still had to move it rearward. Once I found the sweet spot I added a length of thin solder to make up for the now short cord. The stowage box (part #B16) and the first aid box were squeezed into the remaining space. The right side sponson consisted of a couple of boxes, so I added a bit of additional stowage from the old spares box. Does anyone really have his or her junk in one magic box?

## Cram, cram, cram

To cram all of the flame throwing equipment in place, you need to start with the fuel tanks. There is a large plug on the bottom and the instructions offer the option of either cutting them off and building a framework, or sanding the plugs down to a height of 11mm. I left the plugs on. You will not be able to see them when the model is finished. The holes for the cross pipe were drilled out to the corresponding tube diameter and the small 40-gallon tank (left side) was fun tacked in place as far back as I could go. In addition, the pipes for the flame fuel (part #B17) was also fun tacked to the floor to make sure it would clear everything in the gunner's station and eventually mate to the flame gun itself. Be sure to install the gunner's seat before you begin building the flame throwing equipment. It consists of the seat mounted to the left side-wall and a 9mm long tubular brace, which ties it to the floor.

Take my word for it, things get cozy real fast so test



Left side view of the interior in progress. The flame tanks are just laid in for the photo. Note how the radio had to be chamfered and moved back. This view gives a good indication of the cramped quarter and shows the location of the gas bottles to good effect. 4. The engine almost complete with the shroud set in place. Note the location of the carburetor intakes and the fire extinguishers. 5. The completed flame fuel tanks, the cross pipe forms a strong enough joint that the whole assembly can be carefully lifted in and out.

fitting is a must. The right side 60-gallon tank was then fun tacked in place, making sure the holes for the cross over pipe lined up. The pipe or plastic rod in our case was cut a bit longer and the flanges (part #B7) were slipped over the rod. No glue yet, please. The rod was inserted into the holes in the tanks, the flanges were pushed into place and everything was re-lined up before nailing them down. With the tanks in place I can see why the Badger did not have a commander. I would not want to ride on them for any amount of money in the world.

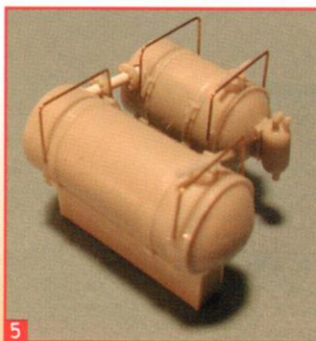
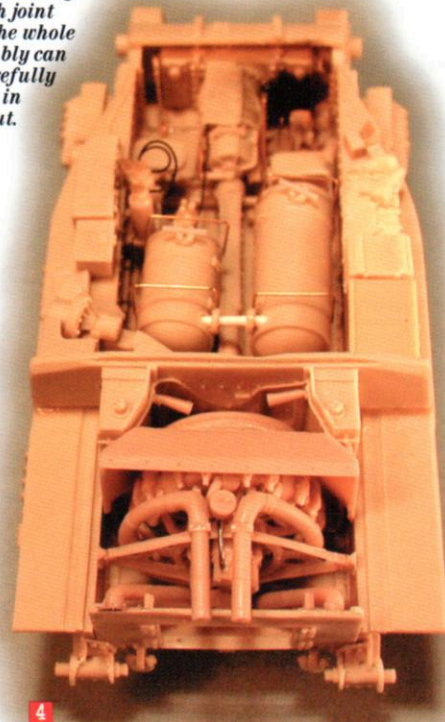
## Get shorty

I was also shorted the photo-etched lifting handles for the fuel tanks, so I made these out of bent brass rod. I also added the various lines, made out of solder, to the gas bottles, and the ones that connected to the floor pipes were left longer so they could be cut to suit after everything was installed. The thick black PVC cord was used from the spill box to the floor pipes after painting and final installation. At this point the tanks and floor pipes were removed and set aside for painting. One fighting compartment, ready to go.

Still avoiding the engine problems, I attacked the upper hull. You have to mill out a 3 mm long slot where the ball-mounted machine gun would have been. I used a Dremel with a small ball nose cutter and basically elongated the existing hole. You will have to do this or the flame gun won't fit right. I drilled out the hole in part #B9, the trigger, and inserted the flame gun from the front, trapping it between the inner and outer glacis plate. When I was sure it was straight, the two pieces were glued together and the flame gun assembly was free to roll around. You will need this freedom later on.

## Take it easy

Needing a night of easy work, I tackled the suspension. No big surprises here. Clean all the parts and mount the bogie housings to the locating notches on the bottom of the hull. The bogie trucks are a one-piece casting and fit snugly into the housing. I inserted all six units and set the model on a flat surface to make sure the vehicle sat flat. With everything set, the trucks were glued from the bottom and the model flipped back over, where final adjustments could be made. I left the sprockets, idlers and tracks off, knowing that the joint between the upper and lower would require filling.



## Engine-neering

On to the engine at last, which assembles quite easily once you get into it. The only trick here is to make sure that the exhaust manifolds end up straight and even and on top of the engine. Also, the carburetors need to be straight. With the engine pretty well assembled, I now attacked the angle problem. To get the engine to fit, the lower shroud was attached to the floor and bumped up to the fuel tanks. The engine was dry fit to the

shroud to the approximate angle. This posed two major issues. One, with the engine canted forward, the engine would sit above the open engine compartment. Not good! Two, a universal joint would have to be made to make up the difference to the firewall. What to do?

This caused me many nights of sitting there with a pile of parts wondering which way to go. My original intent was to have all the engine hatches removed. Finally, after much deliberation, I went for it. The engine was mounted straight and the forward engine cover (part #10) would be left on, owing to its nice photo-etched screen (part #P39), which would offer a little view but not enough to see the universal anyway. I know this sounds like the coward's way out, but there



were other problems to deal with, as you will see.

My major gripe with the Verlinden set is the instructions, which are worthless. They give no clear indication of where the cooling hoses and intakes for the carburetors begin and terminate. After furious scanning of my references and the Internet I figured it out. The big hoses that run along the top connect to the inlet on the rear air intakes and run forward through the holes in the upper shroud and have an opened end, which allows cool air to be sucked into the cooling fan. The intakes for the carbs connect just below the upper intakes, most likely attaching to the intakes via a hole in the rear plate and taper downward to the inlets in the carburetors. The carb intake hoses were sanded to fit and attached. The intakes for the fan were left loose, along with the upper shroud, so the engine could be painted. In addition, the engine brace was modified per the instructions and the mounts added. This was then attached, leaving a little of the mount sticking up giving me another spot to glue the upper hull.

## It's exhausting

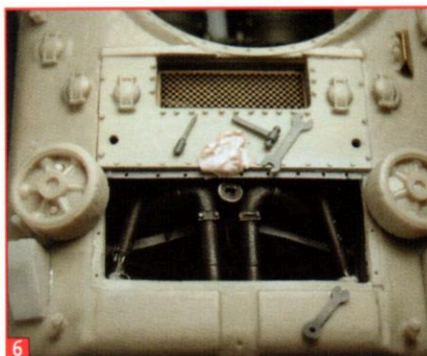
The next thing to deal with was the exhaust. The kit comes with a nice set that did not fit the engine, so I used the Verlinden exhausts. Further perusal of my references showed another detail, which is not mentioned or included in the Verlinden set. There is a mesh screen that fills the gap between the upper hull and the rear plate. To solve this I cut a piece of photo-etch screen from Tri-Masters, which would fit tight to the upper hull. Once this was joined with the lower, the bottom of the screen could be attached to the rear plate. The purpose of the screen was most likely to keep out unwanted grenades. The screen needed to be cut so the sides missed the air intakes and two notches were cut on center with the exhaust pipes so the pipes could be slipped through the opening. Once the upper was joined, I used the exhaust ends from the kit and glued them from underneath. Many dry runs were required to pull this off.

The rest of the engine compartment involved attaching the fire extinguishers and junction boxes. Since the Badger had bolt down engine covers, I needed a mounting surface for the rear hatch (part #11), which would be removed. I used a length of plastic angle to form a mounting flange and attached it to the upper hull from the bottom. I then laid out the hole-pattern to correspond with the front of the rear cover and drilled out all the holes. The bolts on the rear cover were carefully removed and the holes were drilled out, as well. Later, in constructing my little diorama, the rear cover would eventually be laid in the ground.

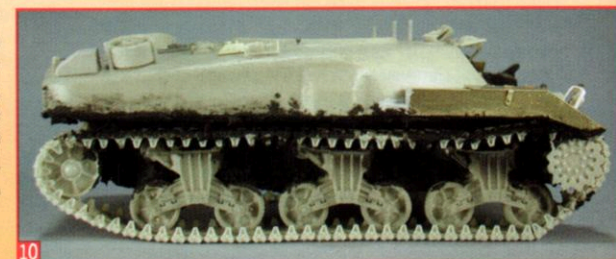
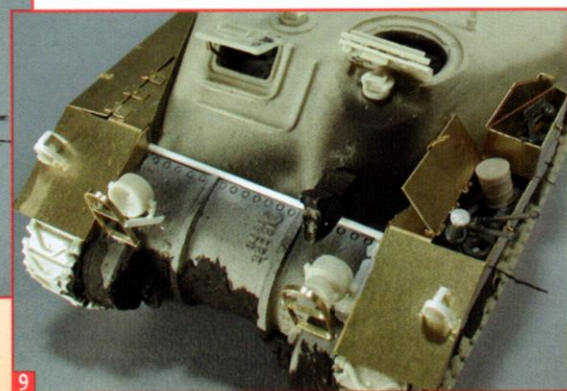
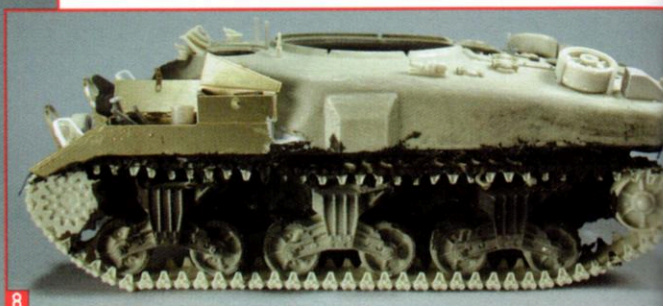
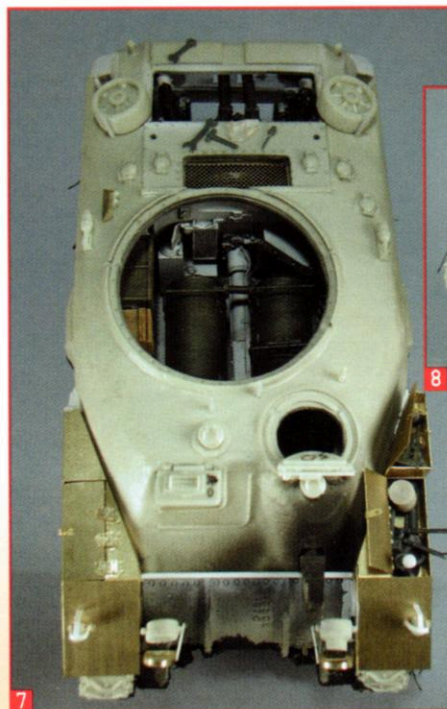
## Interior decorating

No way around it, now it was time to paint the interior. The entire lower hull inside and out was primed using Floquil figure primer, as well as the inside of the upper hull. I then shot the same areas with a dark Tamiya gray as a base coat, also hitting the underside of the hull and suspension, which would be much harder to get at once the tracks were on. Once the base coat was dry, I mixed up a suitable off white interior color consisting of Tamiya flat white with a little light gray and buff. The interior areas were then sprayed with a very light misting action allowing some of the gray base to show through. A little more care was taken in the engine compartment so as not to get too much over spray on the engine.

The flame tanks were then shot a dark green color, per the instructions. The rest of the interior elements were hand painted using Vallejo Acrylics. The engine was painted with a mixture of Vallejo oily steel, black and Prussian blue followed by a dry brushing of straight oily steel. The white interior surfaces were treated to a light wash of W/N Raw Umber and Lamplighter Black. The wash was mostly concentrated on the nooks and crannies in an effort to add depth and bring out the detail. A gentle dry brushing with buff and then pure



6. Rear engine deck showing the painted engine and my home-made mounting surface with hole pattern. 7. Top view of the completed model before painting. Note the homemade rear air intakes on the back of the engine deck. 8. A good view of the left side stowage bin which has been opened up and stowed. You will notice the filler for the rear seam. This required a few applications of MR. Surface to blend everything in. 9. Front view showing all of the brass bits to good advantage, note the cross brace tying the fenders together and my scratch built brush guards. 10. Right side prior to painting. You can see the mud mixture has already been applied. 11. A cut away drawing of the Ram showing the proper angle of the engine.



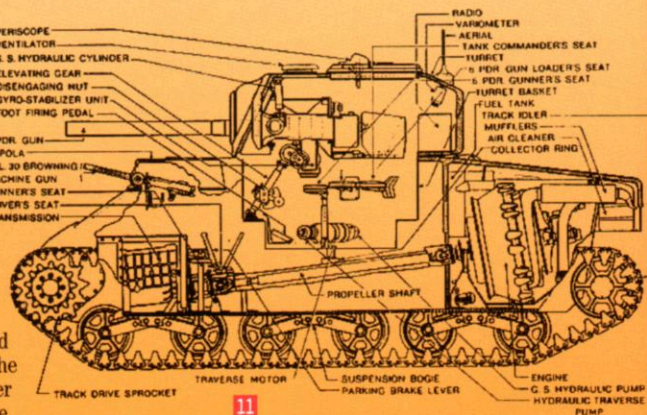
white finished off the interior painting.

Now it was finally time to join the upper to the lower. It was a good thing that I left the tracks off. The fit was awful. I bent and glued and cursed and straightened to no avail. Needless to say filler 'o plenty was required. Even with filling and sanding, the joint just wasn't right. I was pretty pissed. I had only dry fit the thing 100 times. Onward and upward I say, or in this case, put on the tracks and pray for mud. The tracks consist of five resin lengths per side that were put on using my tried and true boiling water method. You will have to remove a link or two on the last run, so make sure you end up on the bottom.

## Back in the saddle

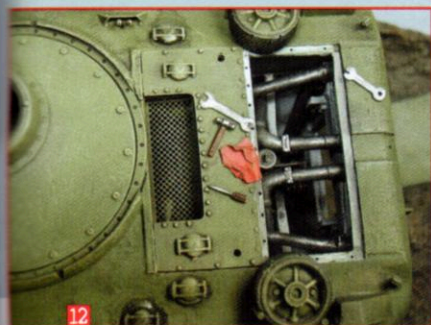
Now began the detailing of the upper hull. As I mentioned earlier, I was missing the Badger fret which also included the left and right rear intakes (part #P7 & P8). Fortunately for me, the instructions provided a full size photocopy of the fret so I was able to scale their size and make them out of plastic tube and sheet stock. The photo-etch screens were cut from the same Tri-Masters set. A little filler and some sanding and I was back in business.

The front fenders were a lot of fun. They have a top and bottom, which forms the side stowage bins. I used thin card stock to form a bulkhead at the front of each fender to add strength and to allow me to open and stow the left side bin. Before adding the bin covers and hinges, I fit the fenders to the model and ran the piece of plastic support rod between the two, per the instructions. Sounds nice, right? Wrong! The





12. Rear engine deck, note the weathering on the engine itself and the wood treatment on the tools which was done by washing them with W/N Vandyke Brown and coating them with semi-gloss once the wash had dried. 13. The completed models from the left side, note the color variations in the groundwork, which was achieved with acrylic washes, and dry brushing. 14. The finished left side stowage bin, I must confess it was a bit tough getting the brush in there. 15. A nice shot of the finished rear end, the "T" number came from a DML kit and the "C" is a railroad dry transfer. 16. I thought it would be amusing to have a guy smoking a ciggy in front of a flamethrower, "got a light"? He is an Ultra-Cast figure and was painted using Vallejo acrylics. I am always up to painting an Ultra-Cast dude.



fender fit was rough. I lined them up as best I could using the wedge shape of the hull as a guide. The problem was, if I went too far forward, the gap between the hull and the bin got enormous and if I moved back, the fenders started to get too close to the tracks. I think they ended up too close to the tracks, but what can you do? You will still have to fill.

The instructions state that the Badger only had one upper bin on the left side. I have seen them on both sides but I followed suit. The hinges and covers were added and the left side bins were opened in the Dr. Joe Porter tradition and stowed with various tools and stowage. Rags and cloths were made using tissue paper soaked in white glue and water. The right side spotlight was drilled for MV Lenses #228 and the brush guards were assembled, per the instructions. You need to add an angle brace from plastic flat stock, which was included in the kit. The headlights on the fenders were too small to drill for a lens so I mounted them. Their brush guards were made out of the same plastic flat stock. At this point I was about done with photo-etch madness.

### Stop badgering me!

The rest of the bits are pretty straightforward. All the hatches were positioned opened to give as many peepholes into the interior as possible. The armored cover was carefully sanded so it would fit loosely in place, allowing it to be removed to view the finished interior. One Badger about ready to paint, almost. The gaps were still bothering me. I knew from the get-go that I was going to display the model in a muddy setting, so before painting I went to work on the undercarriage with a mud mixture of Celluclay dirt, white glue and water. I have been adding mud and dirt to my models prior to painting with good results. The reason being is that the mud is painted as part of the model and not added as an after thought.

All of the holes were masked using the foam that you get in white metal figures. The foam works nice because you can really cram it into tight spots and it doesn't leave any residue like tissue paper. The entire model was then sprayed Tamiya Flat Black. Starting with the running gear and lower portions of the model, three shades of brown were shot in progressively lighter coats. I wasn't too concerned with the actual color since the entire model would be washed and the mud areas could be toned to suit.

The green is my favorite for British WWII tanks, Humbrol #159 Khaki Drab. After allowing this to dry for a day or two, I shot the model with Floquil figure flat to protect the finish from the turpentine wash. The wash consisted



of W/N Lamplighter Black and Raw Umber. The model got a vigorous dry brushing with Vallejo greens and yellows and the details were painted and weathered accordingly. The markings for the 5th Canadian Armored Brigade (yellow Maple Leaf on green field) and Lake Superior Regiment (white 54 on red field) came from Accurate Armour. The CT number on the back came from a DML Firefly kit, the C being a dry transfer.

If you are wondering why my stars are crooked or upside down, the reason is that some Canadian units did this to be different. There, I went out on a limb. I thought this was pretty cool so I went with it. The ubiquitous stars are Pre-Size dry transfers. The mud areas were then dry brushed with various earth tones to get the desired effect. Note how the dirt colors were blended into the finish and were brought upwards on the vehicle. The rear doors were mounted and weathered and the lens and antenna attached. Now all I needed was a suitable setting.



### Making "the scene," baby

I wanted to portray a late war, "through the Dragons teeth" look. Still cold, with a spattering of snow. A path has been plowed through the Dragons teeth and our little beast is broken down. The figure in the front is from Ultra-Cast, and is having a smoke. I thought it might be a little amusing, considering where he is standing. So I call the piece "Got a light?" A simple yet appropriate setting.

In conclusion, I really enjoyed building this kit. If you're not put off by interiors, this is the kit for you. Although I added a bit of extra grief to the project by including the engine, I was happy with the end result. I would say the Verlinden engine is usable and hopefully this article will help smooth things out. I think it is cigar time.

—Nick Vanston

## MMIR RECCE

**Resicast Ram Badger Flame Thrower.** Kit number 35.155. Kit graciously provided by the manufacturer. Suggested retail approximately 125 USD.

### References:

*British and Commonwealth AFV's 1940-46*, Volume #3 – By Duncan Crow – Doubleday & Company, Inc. – Printed in 1972, an oldie but goodie.  
*Sherman A History of the American Medium Tank* – By R.P. Hunnicutt – Presidio Press – ISBN #0-89141-080-5  
*British Military Markings 1939-1945* – By Peter Hodges & Michael D. Taylor



# The Model Citizen

WWII German Greatcoats, part one of two

**W**elcome back! This time around, let's take a look at WWII German greatcoats. Sure, a coat's a coat, right? Well, we thought the same thing until we did some digging. The German greatcoat was a standard issue item, but many variations existed

as well. So many, in fact, that this is the first of two parts focusing on this particular uniform item. With naval, air force and governmental uniforms factored in, there were dozens of different greatcoat styles. To keep it manageable, we'll focus on Wehrmacht and SS.

## Figure 1: M35 Standard Pattern Greatcoat (SS)

*Jaguar figure from #63074 (Street Fighters III), sculpted by Brian Stewart*

This early version for both Wehrmacht and SS units bore a dark blue-green collar. The initial field grey greatcoat was double-breasted with two rows of six buttons each. The coat featured two angled side pockets with rounded flaps and deep turn-back cuffs. Correct length brought the lower hem to the wearer's calf. The rear of the coat featured a half belt with two buttons. The officer's greatcoat featured an inverted pleat in the rear which began just below the collar and ran all the way to the bottom of the tail. For enlisted ranks, this pleat began at the waist. Shoulder straps were worn by all ranks. SS units wore the SS eagle on the left bicep, but not the unit cuff title. Until February 1943, SS units also wore collar insignia. Collar insignia was not worn on the greatcoat by Wehrmacht units. For extra warmth, the collar could be turned up and fastened by a small strap across the throat.

The SS-unterscharführer shown here is a senior corporal of an infantry unit, indicated by the white Waffenfarbe piping on his shoulder straps. He wears full-length marching boots (Marschstiefel). His headgear is the Model 1938 Feldmütze; this initial version featured an inverted soutache chevron in the wearer's branch color (again, white for infantry in this instance) surrounding the SS death's head. A cloth eagle is sewn to the top front of the cap. The sleeve eagle and collar insignia were painted by hand.

## Figure 2: Deutsches Afrika Korps Greatcoat

*Jaguar figure from #63072 (End of the Reich), sculpted by Brian Stewart*

For tropical use in the cold desert nights, a khaki version of the greatcoat was manufactured for DAK units. Originally an olive brown color, this coat took on many different shades due to the harsh climate. The DAK version was identical in all pattern characteristics to the M35 greatcoat.

The sunburned Wehrmacht lieutenant shown here is a second lieutenant of an artillery unit, indicated by the red Waffenfarbe piping on his tropical pattern shoulder straps. He wears first pattern desert boots with tropical trousers bloused outside. His steel helmet has been painted over in desert yellow. To demonstrate the DAK version, the desert boots were taken from VP #661 and the trousers were made from Apoxie-Sculpt.

The rear of the DAK figure (figure 3, inset) demonstrates the correct details for the back of the coat. Note the belt and large full-length officer's pleat, also seen on the coats of enlisted men manufactured after the M35 series.

## Figure 4: M43 Pattern Greatcoat with Large Collar

*VP figure #634 (German POWs), with Hornet head sculpted by Roger Saunders from #HGH13*

A new design of greatcoat was introduced in 1943. Made of lower quality material, the coat's most notable change was an enlarged collar made of the same material as the coat. This larger collar offered more protection when turned up. A second version, as seen here, featured two additional pockets with square flaps. These vertical pockets allowed the wearer to insert his hands inside the coat for warmth, when his belt and support straps blocked access to the lower pockets.

The Wehrmacht schütze shown here is a private of an infantry unit, indicated by the white Waffenfarbe piping on his shoulder straps and the single inverted chevron on his left sleeve. He wears lace-up ankle boots (Schnurschuhe) and canvas leggings introduced in 1941 and a lined cold weather Einheitsfeldmütze.

## Figure 5: Greatcoat for General Officers

*VP figure #391 (German General)*

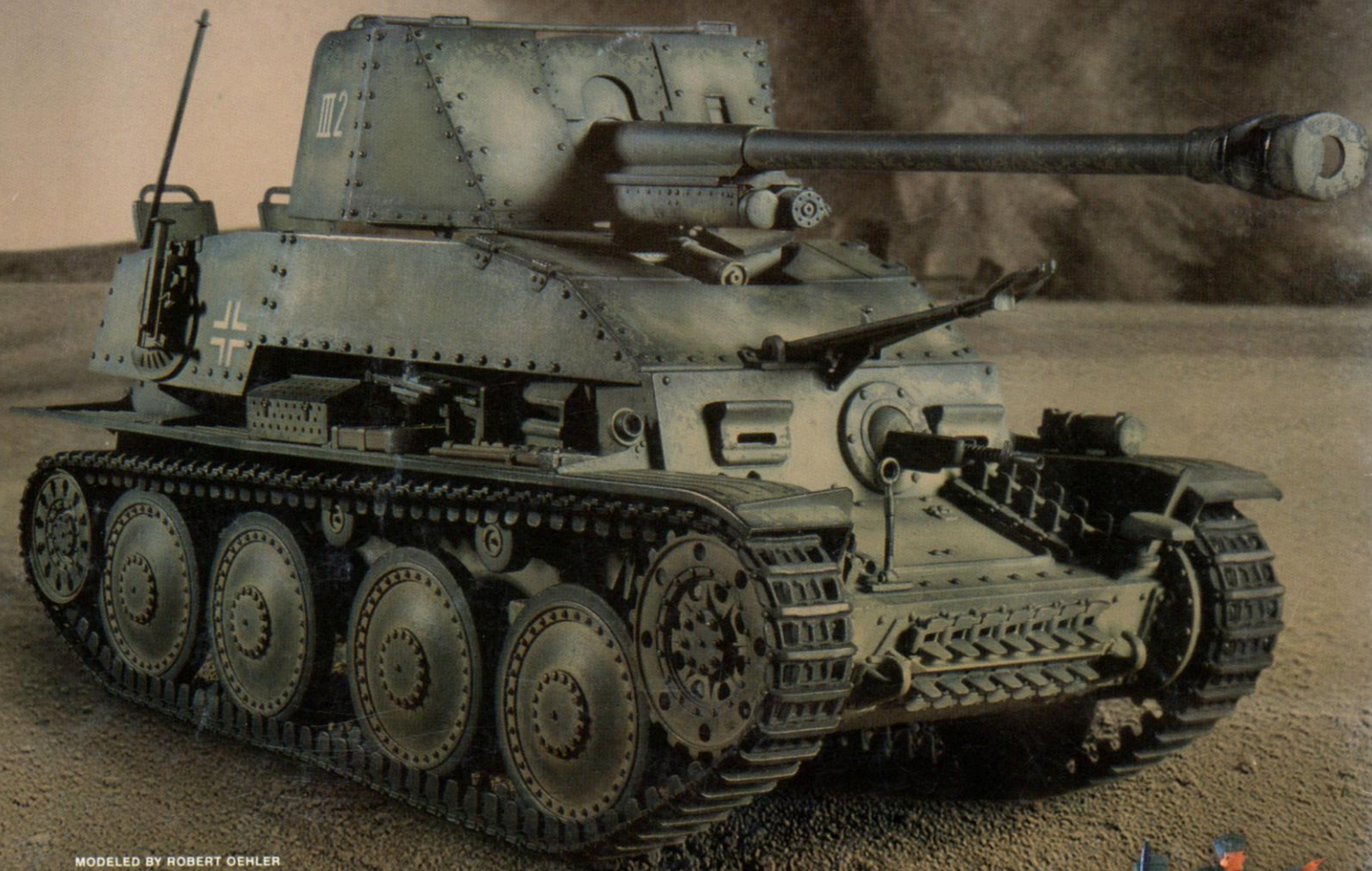
General officers wore greatcoats of fine quality, often made of doeskin dyed field grey. The buttons were gilt-plated and the appropriate rank shoulder boards were worn. The top two buttons were normally undone, with the lapels folded back to reveal the bright red facings worn only by generals. A similar greatcoat was designed for military clergy, but with violet lapels and no shoulder boards.

The Wehrmacht generaloberst shown here wears gold cords and braids on his general's schirmmütze and the Knight's Cross at his throat.

Collectors interested in purchasing these finished pieces can contact [jporter@cosmicbovine.com](mailto:jporter@cosmicbovine.com)



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